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OF
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Galaxy

JULY 1975

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Galaxy

J. E. Pournelle

Fiction

Fact

TINKER

LIFE AMONG
THE ASTEROIDS

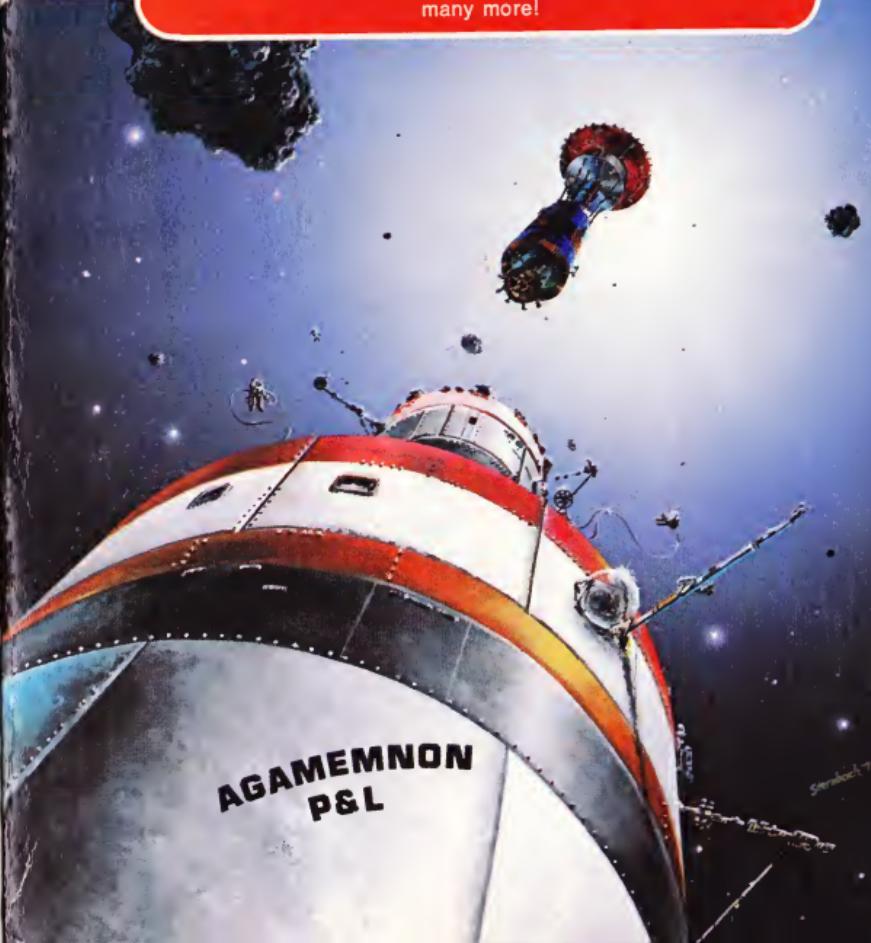
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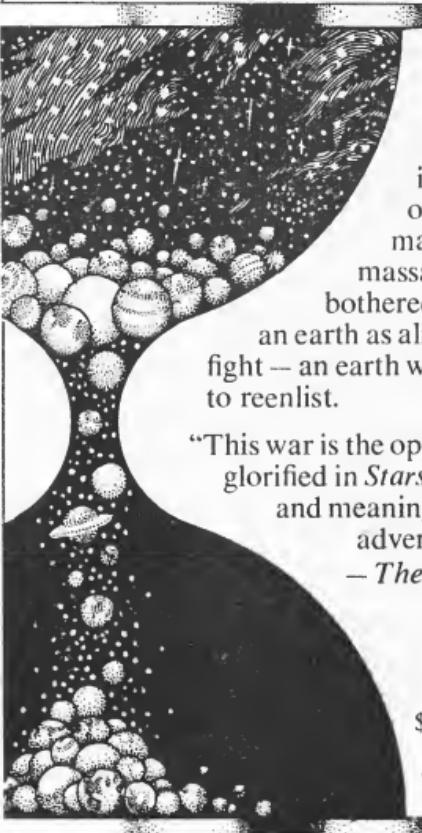
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JULY 1975
Vol. 36, No. 6

Galaxy

SCIENCE FICTION

MAGAZINE



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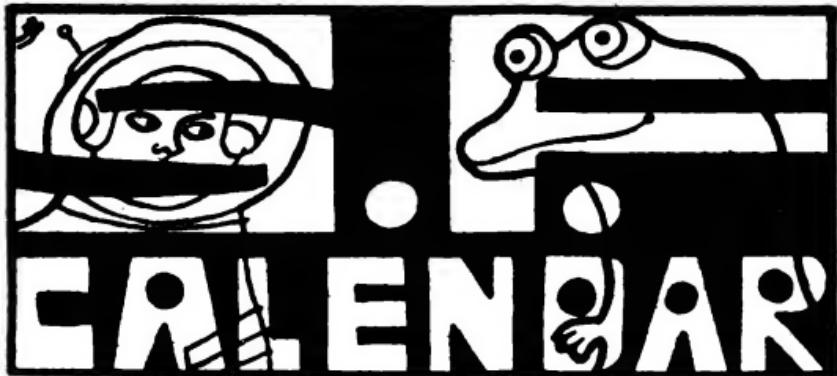
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Cover by Sternbach, from TINKER

Interior illustrations by Fabian, Freff, Gaughan, Sternbach

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CALENDAR

MAY 25-27. MEDIEVALCON, Francisco Torres, Santa Barbara, CA. Membership: \$7.50 attending, \$3 supporting. Write Medievalcon, Box 23354, Los Angeles, CA. 90023.

MAY 29-JUN. 1. VUL-CON II Star Trek Con in New Orleans. For info: Beverly Traub, Box 8087, New Orleans, LA. 70182.

MAY 30-JUN. 1. KUBLA KHAN KHUBED (KK3) at the Music City Roadway Inn, Nashville, Tenn. GoH: Andy Offutt; MC-Kelly Freas. Banquet, art and films. \$7 in advance, \$8 at the door. Banquet \$7.25. For Info: Ken Moore, 647 Devon Dr., Nashville, TN. 37220.

JUNE 29-AUG. 9. CLARION SF-Writers' Workshop, at Michigan State University. Writers-in-residence: Samuel Delany, Gene Wolfe, Roger Zelazny, Joe Halde-man, Kate Wilhelm and Damon Knight. For info: Dr. Leonard N.

Isaacs, Justin Morrill College, Michigan State University, East Lansing, Mich. 48824.

JUL. 3-6. WESTERCON 28 at the Hotel Leamington, Oakland, CA. GoH: David Gerrold; Special GoH: Charlie and Dena Brown. Membership to May 1, 1974, \$5, \$6 there-after. For info: P.O. Box 24560, Los Angeles, CA 90024.

AUG. 1-3. FAN FAIR III the King Edward Sheraton, Toronto, Ont. GoH: Lester del Rey. Membership: \$7 until June 1, \$10 after, supporting, \$2. For info: Box 7230, Station A., Toronto, Ontario, Canada.

AUG. 14-17. AUSSIECON (33rd World Science Fiction Convention) at the Southern Cross Hotel, Melbourne, Australia. GoH: Ursula K. Le Guin. Fan GoH: Mike & Susan Glicksohn. Reg: \$A2 supporting, \$A7 attending. For info: Aussiecon, GPO Box 4039, Melbourne 3001, Victoria, Australia.

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FORUM

ROGER ZELAZNY

SOME SCIENCE FICTION PARAMETERS: A BIASED VIEW

I REMEMBER the seats and the view: hard wood, with corrugated metal high above, television monitors below on the ground, ready, a big clock scoring the seconds; in the distance, a narrow inlet of calm water reflecting a grayness of cloud between us and the vehicle. A couple places over to my left, Harry Stubbs was taking a picture. To my right, a young Korean girl was doing the same thing without a camera. She was painting a watercolor of the scene. In the tier immediately before and below me, with occasional gestures, a European journalist was speaking rapid Serbo-Croat into a plug-in telephone. On the ground, to the far left, the brightly garbed center of a small system of listeners, Sybil Leek was explaining that the weather would clear up shortly and there would be no further problems. When the weather did clear and the clock scythed down the final seconds, we saw the ignition before we heard it and the water was agitated by a shock wave racing across in our direction. Apollo 14 was already lifting when the sound struck, and the volume kept increasing until the metal roof vibrated. A cheer

went up around us and I kept watching until the roof's edge blocked my view. Then I followed the flight's progress on the monitor. I remember thinking, "I've waited for this."

I was not really thinking about science fiction at that moment. I was thinking only of the event itself. Yet I would not have been waiting at that spot at that time had it not been for my connection with science fiction. It was in the calmer hours of evenings after that I did give some thought to the manner in which science fiction has touched me over the years, trying to fit a few of the things that seemed part of it into some larger perspective.

I was raised and educated in times and places where science fiction was not considered a branch of *belles lettres*. As I was exposed to critical thought in other areas of literature it did seem to me that science fiction was being shortchanged, in that when it was mentioned at all it was generally with reference to the worst rather than the best that it had to offer. Unfair, yet this was the way of the world.

RECENTLY, HOWEVER, the situa-

tion changed and science fiction has been a subject of increasing critical and academic scrutiny. The reason, I feel, is partly that a sufficiently large body of good science fiction has now been amassed to warrant such consideration, but mainly because those who felt as I did in earlier times and then proceeded to follow academic careers have taken approximately this long to achieve positions where they could do something about it. Therefore, I have been pleased whenever I have been asked to address a university audience on this subject, not simply because it seems to represent some vindication of my tastes, but because I feel comfortable with those who worked to effect the change in attitude.

Yet, this generated a new problem for me. Every time that I spoke I had to have something to say. It required that I examine my own unquestioned responses to science fiction and consider some of the forces which have shaped and are shaping it. When I was asked to do this piece, I decided to draw together the results of these efforts and display whatever chimera might emerge, both because I am curious to see it myself and because I wish to get in a few words before the amount of science fiction criticism surpasses the amount of science fiction and I am less likely to be noticed.

The Apollo-sized hole filled in my psyche that day in Florida had

been excavated more than twenty years earlier, when I had begun reading tales of space travel. This was a part of it. Certainly not all, but emotion is as much a part of meaning as thought, and since most longtime fans began reading the literature at an early age the feelings it aroused were generally the main attraction. What do they really amount to? Pure escapism? A love of cosmic-scale spectacle? The reinforcement of juvenile fantasies at about the time they would normally begin to fade? All of these? Some? None? Or something else?

The term "sense of wonder" gets considerable mileage in discussions such as this, and I have sought this feeling elsewhere in literature in hope of gaining a fuller understanding of its mechanism. I have experienced it in two other places: the writings of Saint-Exupéry on the early days of air travel and the writings of Jacques Cousteau on the beginnings of underwater exploration with scuba gear. The common element, as I saw it, was that both stories share with science fiction a theme involving the penetration of previously unknown worlds by means of devices designed and assembled by man, thereby extending his senses into new realms.

Turning backward, I felt obliged to classify the myths, legends, scriptural writings and bits of folklore which have always held a high place in my imaginary wanderings as contributory but different.

There have always been story-tellers of a speculative cast of mind who have taken some delight in playing about the peripheries of the known, guessing at the dimensions of the unknown. It might be argued that this is a necessary ingredient for, by Aristotle's definition, the highest form of literature—the epic—dealing as it does with the entire ethos of a people, up to and including that open end of the human condition, death itself, in a fashion transcending even the grand visions of tragedy and comedy. True epics of course are few and historically well-spaced, but that slightly more mundane ingredient, the speculative impulse, be it of Classic, Christian or Renaissance shading, which ornamented Western literature with romances, fables, exotic voyages and utopias, seemed to me basically the same turn of fancy exercised today in science fiction, working then with the only objects available to it. It took the Enlightenment, it took science, it took the industrial revolution to provide new sources of ideas which, pushed, poked, inverted and rotated through higher spaces, resulted in science fiction. When the biggest, most interesting ideas began emerging from science, rather than theology or the exploration of new lands, hindsight makes it seem logical that something like science fiction had to be delivered.

Of course, the realistic novel was also slapped on the bottom and uttered its first cries at that time, an

event which requires a glance at the differences in endowment. Basically, as I have said here and there before, the modern, realistic novel has discarded what Northrop Frye has classified as the higher modes of character. It is a democratic place, without room for heroes, rash kings, demigods and deities. Science fiction, on the other hand, retained and elaborated these modes, including mutants, aliens, robots, androids and sentient computers. There is a basic difference in character and characterization as well as the source and flow of ideas.

And what of those ideas? It has been persuasively argued that *Frankenstein* was the first science fiction novel. To simplify, as one must in these discussions, there seems to be, within the body of science fiction, a kind of Frankenstein vs. Pygmalion tension, an internal and perhaps eternal debate as to whether man's creations will destroy him or live happily with him forever after. In the days when I began reading science fiction I would say that, statistically, Pygmalion had the upper hand. The "sense of wonder" as I knew it was in most stories unalloyed with those fears and concerns which the unforeseen side-effects of some technological usages have brought about in recent years. The lady delivered purer visions involving the entry into new worlds and the extension of our senses. Now the cautionary quality is re-

turned, and the shadow of Frankenstein's monster falls across much of our work. Yet, because this is a part of the force which generates the visions, it cannot be destructive to the area itself. Speaking not as a prognosticator or moralist, but only as a writer, my personal feelings are that a cycle such as this is good for the field, that if nothing else it promotes a re-examination of our attitudes, whatever they may be, toward the basic man-machine-society relationships. End of digression.

Science fiction's special quality, the means by which it achieves its best effects, is of course the imagination, pitched here several octaves above the notes it sounds elsewhere in literature. To score it properly is one of the major difficulties faced in the writing of science fiction; namely, in addition to the standard requirements encountered in composing a mundane story, one has the added task of explaining the extra plot premises and peculiarities of setting—without visibly slowing the action or lessening the tensions which must be built as the narrative progresses. This has led, over the years, to the development of cliches (I would like to have said "conventions", but the word has a way of not working properly when applied to science fiction), cliches involving the acceptance at mere mention of such phenomena as faster-than-light travel, telepathy, matter transmission, immortality drugs and instant language translation devices, to

name a few. Their use represents an artificiality of an order not found elsewhere in contemporary letters—excepting individual poets with private mythologies, which is not really the same thing as an entire field holding stock in common. Yet the artificiality does not really detract and the illusion does work because of the compensatory effect of a higher level of curiosity aroused as to the nature of the beast. Literally anything may be the subject of a science fiction story. In accepting the cliches of science fiction, one is also abandoning the everyday assumptions which hold for the run of mundane fiction. This in some ways requires a higher degree of sophistication, but the rewards are commensurate.

THESE ARE SOME of the more obvious things which set science fiction apart from the modern realistic story. But, if there must be some grand, overall scheme to literature, where does science fiction fit? I am leery of that great classifier Aristotle in one respect which bears on the issue. The Hellenic world did not view the passage of time as we do. History was considered in an episodic sense, as the struggles of an unchanging mankind against a relentless and unchanging fate. The slow process of organic evolution had not yet been detected, and the grandest model for a world-view was the seeming changeless patternings of the stars. It took the same

processes which set the stage for science fiction—eighteenth-century rationalism and nineteenth-century science—to provide for the first time in history of the world a sense of historical direction, of time as a developmental, non-repetitive sequence.

This particular world-view became a part of science fiction in a far more explicit fashion than in any other body of storytelling, as it provided the basis for its favorite exercise: extrapolation. I feel that because of this science fiction is the form of literature least affected by Aristotle's dicta with respect to the nature of the human condition, which he saw as immutable, and the nature of man's fate, which he saw as inevitable.

Yet science fiction is concerned with the human condition and with man's fate. It is the speculative nature of its concern which required the abandonment of the Aristotelian strictures involving the given imponderables. Its methods have included a retention of the higher modes of character, an historical, developmental time-sense, assimilation of the tensions of a technological society and the production of a "sense of wonder" by exercises of imagination extending awareness into new realms—a sensation capable, at its best, of matching the power of that experience of recognition which Aristotle held to be the strongest effect of tragedy. It might even be argued that the sense of

wonder represents a different order of recognition, but I see no reason to ply the possible metaphysics of it at this point.

Since respectability tends to promote a concern for one's ancestors, we are fortunate to be in on things at the beginning today when one can still aim high and compose one's features into an attitude of certainty while hoping for agreement. It occurs to me then that there is a relationship between the entire body of science fiction and that high literary form, the epic. Traditionally, the epic was regarded as representing the spirit of an entire people—the *Iliad*, the *Mahabhatta*, the *Aeneid* showing us the values, the concerns, the hoped-for destinies of the Greeks, the ancient Indians, the Romans. Science fiction is less provincial, for it really deals with humanity as such. I am not so temerarious as to suggest that any single work of science fiction has ever come near the epic level (though Olaf Stapleton probably came closest), but wish rather to observe that the impulse behind it is akin to that of the epic chronicler, and is reflected in the desire to deal with the future of humanity, describing in every way possible the spirit and destiny not of a single nation but of Man.

High literature, unfortunately, requires more than good intentions, and so I feel obliged to repeat my caveat to prevent my being misunderstood any more than is usually

the case. In speaking of the epic, I am attempting to indicate a similarity in spirit and substance between science fiction as a whole and some of the classical features of the epic form. I am not maintaining that it has been achieved in any particular case or even by the entire field viewed as a single entity. It may have. It may not. I stand too near to see that clearly. I suggest only that science fiction is animated in a similar fashion, occasionally possesses something like a Homeric afflatus and that its general aims are of the same order, producing a greater kinship here than with the realistic novel beside which it was born and bred. The source of this particular vitality may well be the fact that, like its subject, it keeps growing but remains unfinished.

THESE WERE SOME of the thoughts which occurred to me when I was asked to do a piece on the parameters of science fiction. I reviewed my association with the area, first as a reader and fan, recalling that science fiction is unique in possessing a fandom and a convention system which make for personal contacts between authors and readers, a situation which may be of peculiar significance. When an author is in a position to meet and speak with large numbers of his readers he cannot help, at least for a little while, feeling somewhat as the old-time story-tellers must have felt in facing the questions and the com-

ments of a live audience. The psychological process involved in this should be given some consideration as an influence on the field. I thought of my connection as a writer, self-knowledge suggesting that the remedy for the biggest headache in its composition—furnishing the extra explanations as painlessly as possible—may be the mechanism by which the imagination is roused to climb those several extra steps to the point where the unusual becomes plausible—and thus the freshness; thus, when it is well done, the wonder. And then I thought of all the extracurricular things which many of us either care about because we are science fiction writers or are science fiction writers because we care about.

Which takes me back to the stands at the Cape, the vibrations, the shouting, to my "I've waited for this." My enthusiasm at the successful launching of a manned flight to the moon perhaps tells you more about me than it does about science fiction and its parameters, for space flight is only a part of the story we have been engaged in telling—a colorful part, to be sure—of the tale of man and his growing awareness. For on reflection, having watched the fire, felt the force and seen the vessel lifted above the Earth, it seemed a triumph for Pygmalion; and that, I realized, had more to do with my view that day than the fire, the force or the vessel. *



ROBERT SCHECKLEY ENTERPRISES PRESENTS SYNCOPE & FUGUE A NEO-MENIPPEAN RHODOMONTADE



MIHKIN AND THE ROBOT came to a tree. At the end of its branches there were blue eyes with thick eyebrows. All of the eyes swivelled to stare at Mishkin.

"I *thought* you would come by this way," the tree said, speaking from a speaker in its trunk. "I hope that you will not deny that you are Thomas Mishkin?"

"That's who I am." Mishkin said. "Who are you?"

"I am a bill collector disguised as a tree," said the bill collector disguised as a tree.

"For Chrissakes," Mishkin said. "Did you follow me all the way to Harmonia?"

"Indeed I did. It's rather a curious story. Mr. Oppenheimer, head of the Ne Plus Ultra Collection Agency for which I work, got an inspiration while stoned on acid at his local Tai Chi Chuan class. It suddenly occurred to Oppenheimer that the essence of life lies in completions, and a man can only judge his life in reference to the thoroughness with which he has played his life-role. Hitherto, Oppenheimer had been an easy-going fellow who followed the usual practice of collecting the easily collectible debts and making a few ominous noises on the difficult ones, but ultimately saying to hell with them. Then Oppenheimer achieved his satori.

To hell with mediocrity, he decided, if I'm head of a bill-

collecting agency, then I'm going to make an ethic and a goal out of bill collecting. The world may very well never understand me; but perhaps future generations will be able to judge the terrible purity of my motives.'

"And so Oppenheimer embarked upon the poignant and quixotic course that will probably bankrupt him within the year. He called all of us collectors into the Ready Room. 'Gentlemen,' he said, 'this time we're going to get it all together.'

To hell with half-measures! Our goal now is 100 percent enforceability, and let the paranoia fall where it may. Go after those debts, be they one dollar or a million. Go to San Sebastian or Samoa or Sambal V, if need be, and don't worry about the costs. We're following a principle now, and principles are always impractical. Boys, we're overthrowing the reality principle. So get out there and collect all of those debits and groove on completions."

("His speech is definitely late 1960s," said the robot. "Whereas this is the year 2138 or therabouts. Somebody is conning somebody."

"Fuck off," snarled the author.)

"That was the call to arms," the bill collector disguised as a tree said.

"And that is why I am in Harmonia, Mr. Mishkin. I have come here as the result of one man's vis-

ion, to collect your debts regardless of time, trouble and expense."

"I still can't believe this," Mishkin said.

"And yet, there it is. I have a consolidation statement here for everything, Mr. Mishkin. Would you care to pay without fuss, or do you want me to get nasty?"

"What debits are you talking about?" Mishkin asked.

"To begin with, there is the matter of your back taxes, Federal, State and City. Didn't quite get around to paying them last year, did you, Mr. Mishkin?"

"It was a tough year."

"You owe eight thousand seven hundred and fifty-three dollars and fifty-one cents to your Uncle Sammy. Then there is the matter of child support. Sorta passed up on that for a year or so, didn't you, Mishkin? Well, it's a neat four-figure bundle that you owe to poor abandoned Marcia and little Zelda. Marcia has a new boyfriend, by the way, and little Zelda just flunked out of the Little Red Schoolhouse. Marcia asked me to tell you that she is well, having the best time of her life, and wants every cent you owe her, right now, or she'll have you into The Tombs so fast it'll make your teeth spin. She adds that, through psychoanalysis, she finally has the ego-strength to tell you that you were always a lousy lay and that everybody breaks up when she relates how diffidently you tried to pursue perversions."

"That sounds like Marcia," Mishkin said.

"Next, you owe Marty Bargenfield a thousand dollars. He's your best friend, in case you don't remember. Or he was. I mean, *he* still feels the same, but you've unaccountably cooled off. One might even say that you are avoiding him. Yet his only crime was to loan you money in a moment of need, when you were breaking up with Marcia and had to buy an abortion for Monique."

"How is Monique?" Mishkin asked.

"She's doing very nicely without you. She is back in Paris, working as a sales girl in Galleries Lafayette. She still treasures the eighty-cent string of wooden beads which was your only present to her during a tumultuous four month romance which you have described as 'the most moving of my life.' "

"I was broke," Mishkin said. "And anyhow, she always said she hated gifts."

"But you knew better, hey, Mishkie? Never mind, I am not standing in judgement over you. The fact that your conduct, judged by any system of ethics you care to name, makes me want to puke, is entirely a personal matter with me and need not concern you at all. Now we come to the Bauhaus Drugstore at 31 Barrow Street, run by fat friendly Charlie Ducks, who sold you dexamyl spansules, dexadrine tablets, librium, carbitol, nembutal,

seconal, doriden, and so on, in astonishing quantities during your drug years, all of them on the basis of one non-refillable prescription for phenobarbital; who continued to do so until two years ago, when the heat got too hot and he went back to selling excedrin and lipsticks, and whom you ripped off for one hundred and eight-six dollars."

"He cleaned up on me," Mishkin said. "He charged me double for everything."

"You always knew that. Did you ever complain about it?"

"Anyhow, I'm going to pay him as soon as I get a hold of some money."

"But there's never enough money for last year's drugs, eh, Mish? We've all been down that road, baby; but it is loathsome, isn't it?"

"I can explain everything," Mishkin said. "I have a statement which I would like to read into the record. The facts are capable of various interpretations. I only need a moment to pull myself together."

The robot extruded an axe from his left hand. He stepped forward and briskly chopped down the bill-collector, who perished miserably.

"But I was just about to explain," Mishkin said.

"Never explain anything," the robot told him. "Avoid bummers. Don't go on other people's trips."

"What is my trip?" Mishkin asked.

"That would be telling," said the robot.

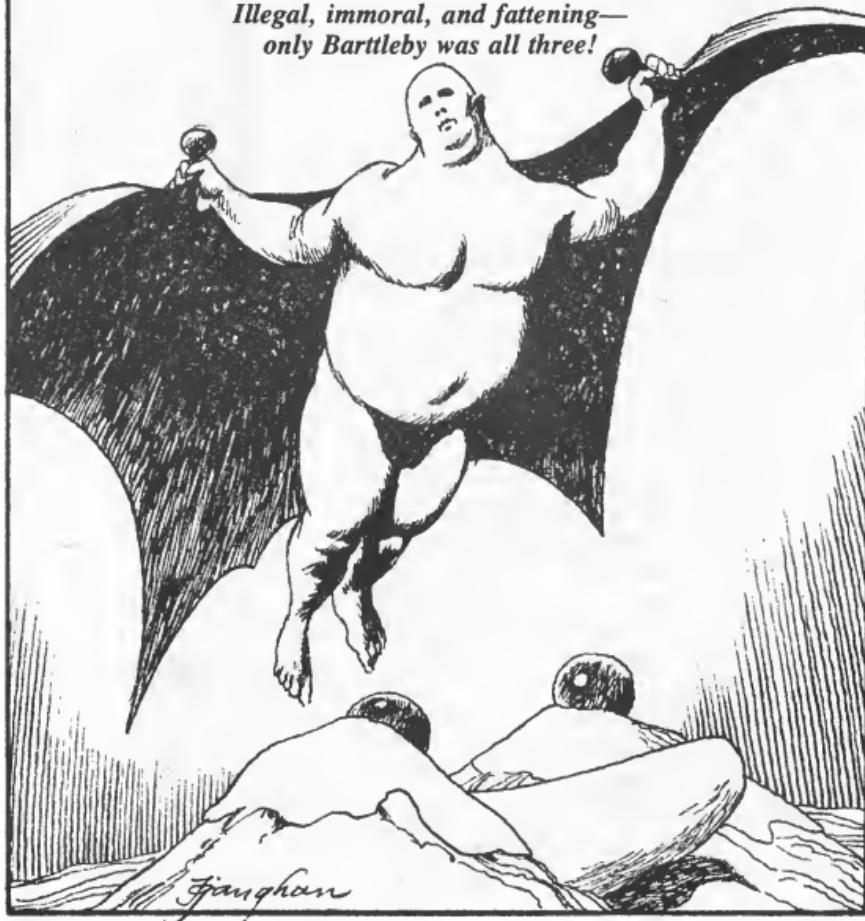


A ROBERT SHECKLEY SELECTION

EYES I DARE NOT MEET IN DREAMS

William Chait

*Illegal, immoral, and fattening—
only Bartleby was all three!*



Gianghan

I. THE ARTIFICIAL SKY

STATELY, PLUMP Bartleby Scrip comes from the stairhead, mortally, morbidly, bored and depressed. He mounts the parapet. Below him descend fourteen monotonous levels; in great cellular walls they curve away crescentlike to right and left, meeting again distantly. The Spa is like a hive, thinks Scrip, only each of us isolated in his or her own cubicle (actually not a cube at all but a rhomboidal octahedron) with nothing so productive as bees to be busy at. After a last weary look around he gives a little launching kick and jumps from the parapet.

Rich, thick air gathers under the clear flexicon wings webbed between his body and outstretched limbs. With a few good strokes he gains against the local down-air and levels off into a planing glide, slipstream whipping his hair and beating against his Ace Flyer goggles. Naked, or nearly so, alone, aloof, aloft, Scrip soars listlessly, like Daedalus forsaken after Icarus fell.

Scrip likes flying best of anything about the Spa, about the moon itself. It keeps the boredom at bay: not just the relative weightlessness, as with skindiving, but the effortless speed, the pure 'personal freedom which he gratefully assumes along with the artificial wings. Of course, only the moon's fractional gravity allows him to fly, to fulfill that archetypal dream, but he would have dreamed it regardless. Although

Freud saw in dreams of flying a token of sexual repression, a wishful flight of the libido. Dirty old killjoy.

Gliding idly, he regards the sky, which is now only a few meters above him. The sky is a seamless expanse of translucent dome, a kilometer and a half across, capping the high-rimmed crater like a cloche-lidded dish, or a hermetic bell-jar valving out raw ultra-violet while admitting beneficent Sol. Scrip has taken his suntan pill; sunshine is another luxury service of the Spa. It gleams an unlikely cerulean through the vast palpable bowl of the strained-glass heavens.

If the odd meteorite, Scrip considers, should puncture the dome just now, might that not divert the tedium, te deum, and scuttle this ship of comatose fools? Yet that continuous flickering on the concave underside indicates that small meteorites are even now being incinerated by the charged ion-field of the outer skin, and big ones will be handily shot down by the war-surplus antimissile lasers. Just as well. Scrip banks away from its iridescent surface with a neat adjustment to the aspect ratio of his lefthand wing.

Turning and turning in the widening gyres. Arch hunter of the upper airs, proud lord of the winds, lone eagle, spreadeagled, hawkeyed eagle scanning for prey, he surveys the lunar pastorale below. Within the circumference of the faceted

cliff-dwelling: the crater floor all flat and green. A volley-ball game in progress on the two-hundred-meter court; volley-ball is invariably played in the nude. The gardens and orchards, where grows celery (five calories per bunch), tomatoes (six apiece), lettuce (four calories a head), as well as orange, peach, and other fruit trees. In another quadrant of the circle a chubby platoon stands ranked on the grassy exercise field. A tall, mannish figure addresses them and her voice carries tinnily up to Scrip:

" . . . your Fitness Directress, Geneva Woodruff, rhymes with foodstuff. Heh heh. *Exercise* is the very *raisin d'être* of the Spa. It is why you have come to the *moon*. Because it is *easier* to move when you weigh only a sixth of what you do on Earth, you can make *some* of that loss permanent. If you exercise, and follow your *diets*. They, as you know, need not be *enforced*; the nearest illicit hot-fudge sundae is *two hundred and forty thousand miles* away. Heh heh. Remember that and *abandon all hope* of cheating with even a sliver of cheesecake. There *isn't any cheesecake* here to tempt you. But you have not come here to *starve it off*. Rather, to *exercise it away*. Right. Jumping jacks. Not too high, mind. After me. One, two, three and feet together again. *One, two. . .*"

For the Spa is a fat farm on the moon, an extra-terrestrial reducing

resort. (Ironic, perhaps, but while there are lots of orbital factories, broadcasting facilities and such, so far the moon has turned out to be humanly useful only for this—but that's Free Enterprise for you.) The prestige of being able to afford a trip to the moon and a stay at Selena Spa doubtless compensates for the stigma of needing to slim. No lumpenproletariat these.

Conceivably, too, they throw money away here to demonstrate a careless contempt for that which rules their earthside lives, as at a gambling casino. Scrip intends to oblige them by relieving some too, in his own small way.

He wheels into an ascending helix, catching the steady thermal on the central, vertical axis of the dome. There are other flyers about, plump angels in their transparent sweatsuits looking like so many cellophane-wrapped bumble-bees. For those too heavy or weak to fly on their own even here, pedicopters have been provided. However much overweight, the pink-skinned blimplike forms sweep the sky with all the easy grace of seagulls, an elephantine ballet.

Scrip, also, is grossly proportioned, but fat is only his disguise. An ectomorph at core, he has been blown up with hormones and metabolic steroids. This mufti of blubber can easily be shed, Georgie had assured him, after the caper. Reversible treatments, Georgie had said. They had better be; Scrip

shudders to think what he'll do to Georgie if they're not. At worst he'd have to reduce in earnest. Which is worse enough, he thinks. He has been ravenous since he arrived, fantasizing—like de Sade in the Bastille—orgies of puff pastry and spaghetti and asparagus in Hollandaise sauce.

Bartleby Scrip is obviously as phoney as his fat, but he welcomes the actor's opportunity to put on a new identity. An assumed name—like all names. Scrip is arbitrarily posing as an East Chicago playboy but could as well be Frank Zeirocks, the photocopy magnate, or Sir Adrian Cleverly, the crack lawyer, or Count Ehrfitt of Lower Schlessweg. Goot mornink, mine hair. Mac Yavelly, the secret politician.

Possibly he doesn't mind not being himself because he doesn't much admire what he's doing on the moon. Alternatively if he weren't deceiving, the self-contempt might not arise, or maybe he wouldn't like himself in any case; life is like that.

Scrip alights on a perch for tired flyers, carefully folding his wings. It is crowded as a locker-room with democratizing near-nudity, and noisy with chatter: English spoken here, mostly, or at least that ubiquitous Midatlantic accent for whose patronage Selena Spa caters, although Scrip notes a massive South American—a Largintinian, no doubt—and a sleek-skinned Orient-

tal; he wonders whether they, too, darken under the sun. (At other such resorts, Moonranch for example, the clientele might be predominantly American, or European at St. Genet's where the female staff wear elaborate pointy nuns' coifs and little else, and terms like Refectory and Dormitory give a mock-monastic tone to the ascetic regimen of self-denial.)

There is also a lush, cherubic girl alight on his perch, one of the dumpling-maids at this fat-rendering factory to be rolled in one end and extruded out the other as a sylph. Pity, thinks Scrip, she's lovely as she is, especially as lunar gravity eliminates sag. She is trying to attract his attention by winding her chewing gum round a long lascivious tongue.

She tempts him, Scrip himself a tempter, but he resists obscurely. He fears an intimacy with some butterball betrayer, exclaiming between caresses that his fat doesn't *feel* right somehow. Ah, then the unmasking, the grim-jawed heavies, the long knives. For surely the management would take indignant exception to his activities, and take the law into its own vengeful hands. Like many wrongdoers, Scrip has avoided ascertaining the exact consequences of his crime, if crime it be. Once he'd thought, the beauty part of the present caper is its quasi-legality. Immoral yes, but how illegal? That was before he'd grown so paranoid about the

vacant-eyed musclemen who waited silently on table.

He imagines them coming to get him, raiding his cubicle, the incriminating evidence found. Perhaps a repentant or dissatisfied customer of his will spill the beans and turn him in. Scrip, on the moon under false name and pretenses; who'd know if he didn't come back? Who'd care—Georgie? Scrip taken for a ride outside the dome. And left in the long cold lunar night all alone: so long, sucker.

"Gotcha!" Scrip jumps at the man's touch. "Been looking all over for you, Balaban. We met at what passes for dinner."

It is Lester Blumquist, a sausage-shaped executive, the sort who hums Muzak. His complexion has over-ripened in the unaccustomed sun, unwholesomely, like a tomato pizza. He is the first potential mark Scrip has approached. "Blumstead. What's cooking?"

"Hunger gnaws at my vitals, as Sylvester the Cat used to say. Balaban, I can't stand it," he whines. "It's like being in prison."

Scrip, who has on occasion been in prison himself, grins with ambiguous sympathy. "What's your beef, Blumquist? You can always leave."

"No space flights during lunarday sessions. . . ."

"Nuts, that's right. A fine kettle of fish. Well, don't be chicken, Babquist, stick it out."

"I'll never last, Barnaby. It's

driving me bananas. My wife, Bertha, is equally obsessed. We dare not sleep; maddening dreams of technicolor food, the haunting aroma of frying potatoes. . . ." He confides his regret at bringing the little woman (two hundred earth-pounds?) but Scrip thinks, Right. That's why he chose a couple; they can share and reinforce each other's lack of fortitude, and Scrip can double the take. "Please, Barnstable. What—you've got—can make it bearable. You hinted as much at dinner."

"Your suffering moves me," fibs Scrip. "My suppliers however will cost you."

"I'm no pauper."

"Five hundred New Bucks, then. Apiece. Cash, of course."

"Is it the real stuff? No synthetics? I've been burned before."

Lester is a desperate man, thinks Scrip, he does not stoop to haggle. "The real stuff, Mr. Bumstead. It's a deal."

2. THE CONTACT

BIRDMAN SCRIP, free in the pale antiseptic air, gauges his descent. Flying is not so easy as it looks; real eagles, Scrip has read, acquire a kind of sixth sense for anticipating pressure-changes and reacting to them, yet they fly by experienced skill, not instinct. A goodly proportion of eaglets never manage to learn. Evolution, to be sure, never meant men to fly, Leonardo not

withstanding. Heavy, marrow-filled bones, no keel-like sternum to anchor the mighty chest muscles. Most obviously, no tail for steering and braking, no feathers for delicate trim. Scrip has become proficient, though, and recently executed a twelve-point barrel roll with a bit of luck. Unfortunately nobody had been watching at the time.

Careful now, kill a bit more airspeed, don't overshoot. While the air currents in the dome tend to be very regular and thus reliable—cylindrical updraft in the middle, a torus arching down to the perimeter—even the simplest landing requires exquisite timing. Scrip matches his speed with the wind, then increases resistance by spreading his wings to parachute in. Abruptly he stalls and drops clumsily onto the Beanery court, narrowly missing a table. "Oh, hi there."

"You all right, then? Nearly came down in my lap."

That lap would be ample enough. Major A.P. 'Tank' Peasblossom, V.C., O.B.E.(se), retired—as are all majors, generals, sergeants, major-generals, sergeants-major, fried-chicken-colonels and buck-naked privates, under the Pax Luna—could anytime be found here on the Beanery court. Breaking all earthly scales at twenty-three stone, he never flies, even by pedicopter, always and only sits strategically tabled with a view of the playing fields of eaten, where the war

waged against fat would be won. But not by him. His ancient field-glasses, once the formidable eyes of the last Armoured Tactical Assault shock Commando Force, now focus only on the double-breasted, deep-chested, full-bodied female patrons of Selena Spa. Since most of the latter go starkers, it is a tit-man's paradise.

"Nipples, actually," he explains to Scrip. "A specialized subset of breastworks, my retirement hobby. The bigger the better, I'd always thought, yet a tit without a nipple is only an udder."

"An udder what?" quips Scrip.

The major chuckles Falstaffian. "An utter boob, a pun my word. You're witty with the titties, my boy."

"Thanks, I like to keep a breast of developments."

"Used to be in tanks myself, but I've traded tanks for the mammaries. Nipples, as I say, are as various as faces and equally reveal much inner character. I've become a kind of pectoral physiognomist, as it were. Take that waitress for instance, the one with the heliotrope hair."

"Gladly, sir." Scrip scrutinizes the subject indicated. Waitresses' uniforms consist only of aprons, with emblazoned pockets (Hi! I'm your Slendrette MARLA!), while male staff wear starched tuxedo shirtfronts, bow ties, and black formal jockstraps. Since Spa employees had evidently been hired

largely for their near-ideal physiques (Scrip half-suspects them of being lifelike robots, too perfect and expressionless), this bodily exposure must be intended to psychologically encourage patrons by example towards that goal. Marla is, in short, pulchritudinous.

"Now, your smallish, darkish, high-definition nipple type *usually* denotes a diffident introvert," perorates Major Peasblossom, ret., "as distinguished from, say, your good-natured, self-assertive, dilated areola. In Marla's nipples I nonetheless read a laconic articulation of the corona *masking* some latent intensity. They're asymmetrical, you see, and almost always erect. And yesterday I could have sworn the right one *winked* at me."

"Good Gravy!"

"It did. As if to say, 'I know your game, old man, but I don't mind.'" Endearing gesture, don't you think? As with bird-watching, patient observation of the rosy tit paid off. You must borrow my field-glasses sometime. A most rewarding study."

"May one not assume then, sir, that you haven't come to the Spa to reduce?" ventures Scrip, thinking, All the better for me.

"My dear boy, I'm too thin now. I was no beanpole in my youth, into my tank with a shoehorn. . . ."

"But, Major, aside from the aesthetic compensations of your unique avocation, the diet here must be hard to bear?"

The portly old soldier sighs. "Orders are orders, even doctors' orders. I come here often, a not unpleasant duty. The light lunar gravity helps support my overload, like the brontosaurus in his bog. I have always loved to eat, t'eat, yet one must make sacrifices for one's art, if not one's health. Sometimes, though, when zeroing-in on a pair of pendulous bosoms, such as once put lead in my pencil, I can think only of calorific fruits swaying ripe on the vine: sweet cantalopes, golden honeydews, watermelons. . . . He salivates copiously, without shame.

Now for the clincher. "I'd like to help you, Major," says Scrip, but for some reason he quotes him a much lower price than for the Blumquists. That is why Scrip is not a very good con man.

Later, reflecting on it: Take Georgie for instance, superlative, an artist consummate. Georgie suits the role much better; moreover he is genuinely stout. His salesmanship, thinks Scrip, is infinitely more sophisticated than my own ingenuous approach. Hey, meester. Georgie could be President he's such a fraud; he can lie to a polygraph. Georgie however, with a record longer than Pinocchio's nose, could never have gotten past the outbound Customs gate unless the cops had their heads up their asses. Which oftentimes they do: still too great a risk. For Georgie, that is. . . .

Some uneasy awareness causes

Scrip to glance up. The Major has waddled off somewhere. Marla, the waitress with the heliotrope hair and, purportedly, the educated nipples, stands at his table. She sets a cloche-lidded dish before him.

"Sorry, but I didn't order—"

"T.S., B.S.," she prompts, transfixing him with a gently commanding gaze. He uncovers the dish.

It contains a single, perfect peach.

Scrip stares blankly at the peach, then the girl.

"Your cue," she says, uncertainly now. "T.S.?"

Tough shit, bull shit, T.S. Eliot? A rush of confusion besets him, then in his rumpled memory associations stir, yawn, stretch, awaken. Hot Dog! She, *she* is the contact!

"Do I dare to eat a peach?" he stage-whispers.

"Let us go then, you and I, when the evening is spread out against the sky," she countersigns with relief.

"What evening, here in perpetual sunlamp day?"

"Eight o'clock earth-time, cubicle 72, level J, staff quarters." As she leans over Scrip to tidy the peach in its dish, her right breast spills further out of its apron. And unmistakably, ten centimeters from his own eye, her rightside nipple winks at him.

Is this proof that she is, or cannot be, an automaton? Now she spins briskly, as only waitresses can, and walks away. The peach, Scrip per-

ceives, has been rolled around so that the side now visible bears writing:

SHE'S GOT THE STUFF.
GOOD LUCK, FAT BUDDY.

GEORGIE

Dutifully, he eats the message.

3. THE LUNAR MUSHBED EXPERIENCE

SCRIP FINDS HER cubicle on an access gallery behind the hive, against the crater wall. MARLA FELIGN, Slenderette Third Class, is graven on the nameplate.

She opens almost immediately, dressed in a high-necked, floor-length, heliotrope robe. So erotic is this unfamiliar modesty to him that he astonishes himself by embracing her, without premeditation. Still more to his surprise she reciprocates, as if reunited with a lover.

She has opaques the front wall almost completely so that it glows a subaquatic green, the twilight of moon fishes. They converge on her mushbed, fumbling with ardour. It is over in no time, by which one means that time, like gravity, has been suspended here beyond duration or judgement thereof, hours or minutes.

To be sure, the Instant Replay on the videoscreen at the foot of the mushbed would, had they activated it, have shown them engaged like whirligig gears, mingling hair and limbs with fingers and other members vibrant in each others' every

aperture, doing all things whatever that two can do together, or almost all. His body like a maddened heart and her heliotrope lips moaning muffled, delicious, delirious non-words and then licking his slippery face like a cat. He is above, behind, and beneath her and the Colour-Organ Light-Show Feedback Accessory projects on walls and ceiling of the rhomboidal octahedron a flaming ocean, two contraposed spirals twisting inwards and upwards in a tense electric blue. Then the vortex turns inside out, exploding into the usual kaleidoscopic firework of molten flowers: azure, lime, and hot, jellied pink.

And now Scrip recognizes another attraction of lunar gravity and hence of the Spa. Moonballing—especially on a mushbed, aptly named—allows a new agility at .16 G's, without the total acrobatic challenge of orbital free fall. Every action has an equal but opposite. All the moon, in fact, simulates a mushbed; as Scrip has suspected, not everyone comes here to reduce.

As they lie there enmeshed like two spent swimmers, Scrip compares his newfound corpulence unfavourably with Marla's attenuated torso, her breasts like little muffins. "I was not always as you see me now," he says, suddenly self-conscious. "I'm not really this size or bloated shape; it is an alias of the flesh, a gross impersonation. Temporary silicon padding, courtesy of

our mutual confederate Georgie. A few months ago I was as thin as you."

"Don't be embarrassed by your body, not here in Fat City," says Marla, chewing on his ear. "A year ago I weighed more than you do now."

"You're pulling my leg!"... it isn't quite his leg.

"Truly. This is an unsolicited testimonial: I lost it at Selena Spa. It can be done, if one cooperates."

"I do admire your transformation, if not my own. But perhaps you wouldn't like me thin," Scrip says, not sure how seriously he means it.

She squeezes him gingerly. "I like you for yourself, Bartleby. You have... eyes I can trust. You're about the only decent person I've met here."

"I'm a crook, Marla. I take advantage of human weakness and make money off unnecessary misery. Balaban, rhymes with Caliban."

"We're all in this together," she says between love-bites.

He cannot restrain it, the words come welling up unbidden as a sneeze: "What's a girl like you doing in a job like this? I mean, don't you, having been... pudgy yourself, sympathize with the patrons? How can you then subvert their... liberation from pudginess, by helping me undo their diets?"

"An interesting ethical question," she admits, sucking on his

toes. "Philosophically, abstinence without temptation is no moral contest. Let no maid call herself chaste who hasn't been chased, right? Psychologically, a frequent motivation of patrons who succumb to our enticements is a sort of self-punishment for anticipated guilt. Anyway, I'm writing my dissertation in Practical Psycho-Philosophy on it. My research, you see, finances itself."

"Ah. May I ask you another, even more personal question?" She strokes him affirmatively. "Can you wink the left one too?"

"Yes, but it's more difficult. I'm not ambidextrous."

"How do you do it, in either case?"

"I don't know, really. After I shed all that weight, extra skin must've been left over. Well, some people can wiggle their ears. . . ."

Presently Scrip leaves, carrying the suitcase Marla has transferred to him, and which she had smuggled into the Spa; staff luggage isn't checked for contraband.

The corridor he walks along is lined with posters, such as the one captioned CARBOHYDRATES KILL, showing a half-consumed loaf of mouldy bread tagged Exhibit 'A'. Another with fat mourners at a funeral: Eating Can Damage Your Health.

Surely, thinks Scrip, the Spa is as much of a racket as mine, only its operational scale lends it the euphemistic respectability of Big



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Business, avarice institutionalized. Am I not also an entrepreneur? On the other hand, all thieves and conmen are amateur practicing socialists; they redistribute the wealth. Of course one must allow that Robin Hood only robbed from the rich because the poor didn't have anything. Ideologically a hairy one, Bartleby.

A racket nevertheless, the Spa. Far more permanent ways to reduce these days, like by-pass surgery. Exercise isn't *really* easier under moon gravity; as Scrip has discovered through flying, virtual weight may decrease but body *mass* doesn't. And what of those persistent medical studies of untoward *side effects*? Calcium atrophy after prolonged low gravity: the Rubber Bone Syndrome. Yet his conscience is tweaked by Marla's disclosure that the Spa's method works, given a bit of *will power*—free will to choose. Carbohydrates kill.

He arrives at the cubicle door of Lester and Bertha Blumquist, and is admitted. No pleasantries need be exchanged, only the thousand New Bucks counted out. Scrip opens the refrigerated suitcase; all the ingredients to hand, he deftly prepares them behind the concealing suitcase lid. Blumquist is drooling like a St. Bernard. The blackmarket goodies are ready. Two jumbo banana splits, each with handfuls of chopped walnuts sprinkled lavishly on brilliant clouds of whipped cream

surmounting great globular mounds of French vanilla, pistacchio, peppermint flake, and peach, sloshing in concupiscent chocolate sauce, burying monster bananas fit for King Kong, boat-shaped krystalene dishes, and all topped with paired marachino cherries like clowns' noses or nipples too red for their own good.

4. THE ROCKET-COACH TOUR

THE GIRL LITERALLY bouncing down the aisle is a specimen art history lecture, from the Venus of Willendorf through Rubens of course to a Fragonard water-baby with eyes by Renoir. Big and round they are, as are also the four or five beachball-sized orbs of which she is otherwise composed. Softly yielding except for the Urchin Look pincushion hair and the tiny teardrop pearls at the end of her overlong eyelashes, silver above mirrored contact-lenses.

"Is this seat taken?" she asks, sitting next to Scrip. The coach is half-empty.

"You're Bartleby Scrip," she says. "I've seen you around."

"About two meters around," says Scrip; the girl giggles.

The driver-guide commences his commentary with a sharp preamble of static: "*crackle* to Lunatrip Tours. We've been cruising at our maximum speed of a thousand kilometers an hour, which'd be faster than sound if *crackle* any sound to be faster than ahaha. I'm slowing

down now to give you a view of Clavius right below, can't miss it, a big hole in the ground. Big means in this case two-hundred thirty-five kilometers across. Clavius, good folks, is a grandaddy crater but we got craters in every size, 300,000 on the Near Side alone more than a kilometer across. Somebody counted not me ahaha."

Clavius in Scrip's porthole reverie is like a big empty swimming pool, Bartleby thinks.

Enough to bring on acrophobia, but who says Nature abhors a vacuum? That's the moon all over: a bunch of empty swimming pools. The guide's a bigger con than me if he can sell its scenery. There's not much for the powers of imaginative suggestion to work on, to play with, as there is almost anywhere on Earth. Even the architectonic clouds out the window of a jet, formations changing as I watch and presumably ever and always changing after I pass, if I'm not there to see. Magnificent desolation my ass, these moonscapes boring and dead, not eroded enough for the Devil's Anvil, the Old Stone Face, or Camelhump Rock. That impossibly high-contrast lighting, unmellowed by distance and the intervening air. Inkspot shadows more substantial than the unpicturesquely littered rocks which cast them. Beyond entropy, a ruination that never was anything but. Wasteland. *In death's dream kingdom / Eyes I dare not meet in dreams—*

The eyes of the beachball girl upon him, smiling. "I'm Joyce," says she, "Joyce James."

"I've seen you around," says Scrip.

"Well, that was Clavius. One of five supercraters two hundred kilometers or more in diameter. Now it just isn't true *crackle* you've seen one you've seen them all. You good folks gonna know more about lunar geography, geology and topography than you'll wanna know ahaha. We got rifts, we got scarps, chain craters, rills, ejecta blankets, magma rays, you name it—"

"Take me to the skinnies, Bartleby. New double bill at the Pornocopia: "Up Your Ante", and "Let Them Eat Kate" with the celebrated scene where her orgasmic High C breaks a crystal chandelier. It's not faked, you know."

"The Pornocopia? Necking in the balcony and popcorn too, with lots of melted butter?"

"Mushbeds in the balcony but no popcorn, you silly! Makes me hungry, though!"

Rather have the popcorn, myself, thinks Scrip cold-bloodedly.

"You want mountains, we got mountains. The Leibnitz Range at 9000 meters, taller than Everest. Of course there's no sea level to measure from, the Seas here don't hold water.

On your left, Oceanus Procellarum, the Ocean of Storms, bigger than the Mediterranean, but don't worry about the weather ahaha. And

Sinus Iridum the Bay of Rainbows is as grey as the rest, as you can plainly see coming up on your right. *Crackle*. The big crater is Archimedes."

"Hey Bartleby, know how to do the Archimedian Screw?" she is whispering. "Wanna learn?"

"*Crackle* more craters in the highlands than the Seas, which may therefore be of more recent origin. These so-called seas, now, *crackle* fifty per cent glass, that's right, glass, plus a good deal of titanium, zirconium—"

"I for one never believed in the Green Cheese Theory of the moon's materiality," says Scrip. "Blue cheese, maybe. Roquefort, Danish, or possibly Stilton."

"Giggle," goes Joyce, "Making me hungry again."

Scrip shrugs and turns to the porthole, catching a Mephistophelean reflection smirking back in the plastiglas.

"—what you call your *impact halo*. Notice the rim wall terraced concentrically and the conical peak in the middle—"

Like a nipple, thinks Scrip. Doubtless titanium. Or an eye, a round cartoon eye with a bulging pupil.

"Don't be alarmed, good folks, I'm gonna roll the coach so you can get a better angle on that gorgeous sky.

This is what you're missing under those domes, good folks. Bigger and brighter stars here, as

advertised, because on Earth thirty per cent of their light gets absorbed by the atmosphere. You'll notice they don't twinkle, either, for the same reason. And you won't be able to see the familiar constellations; too many new stars in between the dots to be connected. Each and every star, good folks, is one and three-sevenths times as bright as *crackle* when seen from Earth. Your lunar sky at night contains about *twelve thousand* stars, *twice* the terrestrial number. But this isn't bad for daytime, is it?"

"Faaabulous," bleats Joyce, clutching Scrip's thigh as they gaze together cheek to cheek at the sterile sky. "Romantic, innit?"

Avoiding the porcupine hairdo, he murmurs in her ear, slowly but urgently: "I am the eggman, the Emperor of Ice Cream. I scream, you scream, we all scream for ice cream."

"And another thing you won't see back home, good folks. Isn't she *crackle*? Is there any sight like it? The Earth's globe seen from here is nearly four times the diameter of the moon over Miami and thirteen times the area. Due to this and to the reflectivity of the atmosphere, Earthshine is *seventy times* as bright as... moonshine ahaha, and I think you'll agree, good folks, that it's more than worth the price of the ticket."

Later, Scrip buys a colour postcard of Clavius but has no one to send it to. ★

A STEP FARTHER OUT

LIFE AMONG THE ASTEROIDS

ONE OF SCIENCE FICTION's biggest problems is consistency. Whenever we make an assumption, it's not enough simply to leave it at that; to be fair to the reader, the sf writer should also see what that assumption does to everything else.

This was brought home to me when Jim Baen called to ask for a column on "What happens if we get an *economical* space drive?" The result was not only the column, but the cover story for the issue.

The problem is more complex than it sounds. In fact, until we have some idea of what *kind* of space drive, there's no real answer at all.

For example: let's suppose we have a magical space drive in which we merely turn on an electric motor and "convert rotary acceleration to linear acceleration." Some readers may recall the Dean Drive, which

was supposed to do just that.

Incidentally, the Dean Drive wasn't suppressed by big corporations, as I've heard some fans speculate. I am personally acquainted with two men who were given large sums by aerospace companies and instructed to buy the drive if they saw any positive results whatever in a demonstration.

After all, if the thing worked just a little bit, it would be worth billions. Think what Boeing could do with an anti-gravity machine! But, alas, no demonstration was ever given, although the prospective purchasers had letters of credit just waiting to be signed.

However, couldn't we simply assume that it will work and write an article about the resulting space civilization?

No. The discovery of a "Dean Drive" would mean that every fun-

damental notion we have about physics is dead wrong. It would mean a revolution at least as far reaching as Einstein's modification of Newton. An anti-gravity device like that would have consequences reaching far beyond space drives, just as $e = mc^2$ affected our lives in ways not very obviously associated with the velocity of light.

This doesn't mean that "Dean Drive" systems are impossible, of course. It does mean that looking at their implications is a bigger job than I want to take on in a 5000-word column.

JIM'S QUESTION WAS, "What happens if we have something that gives one gravity acceleration over interplanetary distances at reasonable costs per ton delivered?" Part of the question is easy to answer. Now that I've got my Texas Instruments SR-50 (by the way, they've now come out with a really marvelous device called the SR-51, and I hate them for it) I can run off a couple of tables to show what we could do with such a system.

The figures in Table One assume you accelerate half way, turn end for end, and decelerate the other half, so that you arrive with essentially no velocity. The numbers aren't exact, because I haven't accounted for the velocities of the planets in their orbits—but after all, Pluto is moving about 5 kilometers a second, and Mercury about 50, and

when you're playing with velocity changes like these, who cares about the measly 45 km/sec difference between the two? For shorter trips the effect is even less important, of course.

The numbers are a bit startling if you're not familiar with them. Twenty days to Pluto? They won't surprise old time sf readers, though. A full gravity is a pretty hefty acceleration. If you don't bother with turnovers but just blast away, the results are given in Table Two, and they're even more indicative of what one gee can do.

Of course, long before you've reached light-speed at the end of a year, you'll have run into relativistic effects. We're only concerned with the solar system, though, so we can ignore trips longer than a month and avoid relativity altogether.

Now we can write the article, right? Wrong. The problem is that last column in Table One. Just how do we expect to get delta-v as big as all that?

Let's illustrate. As we've shown in previous columns, delta-v can be calculated from mass ratio and exhaust velocity. (If you came in late, take my word for it; we'll get past the numbers pretty quickly.)

Now you could hardly call a drive *conomical* if the mass ratio were much worse than, say, three, which means that if you start with 1,000 tons you'll arrive with 333. What, then, must our exhaust veloc-

TIME-TABLES FOR INTRA-SYSTEM TRAVEL UNDER CONSTANT ACCELERATION

TABLE ONE

TRAVEL TIMES AND DISTANCES AT ONE GRAVITY ACCELERATION

DISTANCE	TIME (in hours)	VELOCITY CHANGE (Delta-V)
380,000 km. (Earth-Moon)	3.5	122 km/sec
1 AU (Earth-Mars, Venus, Sun)	68	2,421 km/sec
3 AU (Earth-Asteroid)	119 (5 days)	4,194 km/sec
9 AU (Earth-Jupiter, Saturn)	206 (8½ days)	7,265 km/sec
50 AU (Earth-Pluto)	485 (20 days)	17,123 km/sec

TABLE II

HOW FAR CAN WE GO AT ONE GRAVITY?

TIME OF BOOST	VELOCITY REACHED	DISTANCE COVERED
1 hour	35 km/sec	63,500 km
1 day	850 km/sec	¼ AU
1 week	5,930 km/sec	12 AU
1 month	25,000 km/sec	200 AU
1 year	300,000 km/sec (speed of light)	½ lightyear

*An AU (Astronomical unit) equals 150 million kilometers, which is the average distance from the Earth to the Sun.

ity be to make the simple trip from Earth to Mars?

It's horrible. About 2,204 kilometers/second, and what's horrible about that is it corresponds to a temperature of 50 million degrees Kelvin. The interiors of stars are that hot, but nothing else is.

Just how are we going to *contain* a temperature like that?

One answer might be that we'd better learn how; fusion power systems may require it. OK, and the fusion boys are working on the problem. However they solve it, we can be sure it won't be anything small that does the trick.

It's going to take enormous magnetic fields, superconductors, heavy structures, and a great deal more. After all, nothing material can hold a temperature like that without instantly vaporizing, and even containing the magnetic field that holds that kind of energy is no simple job.

Let's assume we can contain fusion reactions, though. We know immediately that energy is going to be no problem for our interplanetary civilization. With plentiful energy we'll find that a number of our other problems vanish.

There won't be many "rare" materials, for example; if they're rare and valuable enough, we'll simply *make* them out of atomic building blocks. Of course it may be cheaper to go find them somewhere, such as on Mars or among the asteroids, but we'll always be

up against competition from the transmuters.

Life on Earth, at least among the people of the high-energy civilizations, will change drastically. Pollution will cease to be a problem (unless the fusion plants themselves are polluters, which isn't impossible). The Affluent Society will be with us and possibly so will be regulations and rules, bureaucracy, and all the other niceties of a universal middle class.

All this comes as a result of assuming our space drive. More central to our immediate topic is the fact that the ships will be quite large—Queen Mary or supertanker size, not one-man prospector jobs. Someone is going to have to put up a lot of capital to build them, and it's not likely to be the Bobbsey Twins and their kindly uncle building ships in the back yard.

Only governments or very large international corporations will be in the spaceship operating business, that's for sure. Thus there have to be profits in interplanetary travel. Not even governments will build more than one of these ships simply for scientific reasons. There's got to be commercial traffic.

Next, there's a technological problem: assuming we have fusion power and a method of getting electricity from it doesn't necessarily give us a space drive. Contrary to the notions of a lot of high school science teachers back in the 40's, rockets don't "need air to push

against"; but the rocket exhaust certainly does need something on the rocket to push against.

What can that be? Perhaps some kind of magnetic field, but an open-end fusion system is at least two orders of magnitude harder to build than a "simple" system for generating electricity. It's one thing to take 50 million degrees and suck electricity out of it, and quite another to use that as a reaction drive.

Perhaps I'm not sufficiently imaginative, but for all these reasons I decided to shelve the one-g system and design the article and story around something much simpler. In fact, if we had the electric power system, we could build these ships right now.

Ion drive systems solve the "something to push against" problem by shooting charged particles out the back end. The ship is charged, the particles are charged, and they repel each other. You can get very high exhaust velocities, in the order of 200 km/sec, with ion systems. They're among the most efficient drives known.

The trouble with present ion drives is that electricity costs weight. As an example, a currently useful system needs about 2100 kilowatts of power to produce one pound of thrust. Since the power plant weighs in the order of four tons, the total thrust is not one g, but about 1/10,000 of a gravity.

It works, but it's a little slow get-

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ting there. Not as slow as you might think: it would take about 140 days to go a full AU, and your ship would reach the respectable speed of 12 km/sec. Still, it's hardly interplanetary rapid-transit.

Suppose, though, we had a fusion system to generate the electricity. It would undoubtedly weigh a lot: let's say 1000 metric tons, or about two million pounds, by the time we've put together the fusion system and its support units. We'd still come out ahead, because we'd have lots of power to play with. Assuming exhaust velocities of 200 km/sec, which we can get from present-day ion systems, we'd still have quite a ship.

She wouldn't be cheap, but it's not unreasonable to think of her as on a par with modern super tankers. She wouldn't be enormously fast: I've worked out the thrust for a ship massing about 100,000 tons with that drive, and she'd get only a hundredth of a g acceleration. Still, a trip from Earth to Ceres would take no more than 70 days, and that includes coasting a good part of the way to save mass.

A world-wide civilization was built around sailing ships and steamers making voyages of weeks to months. There's no reason to believe it couldn't happen in space.

FOR EXAMPLE: IBS *Agamemnon* (Interplanetary Boost Ship) masses 100,000 tons as she leaves Earth orbit. She carries up to 2000 passengers with their life support requirements. Not many of these will be going first-class, though; many will be colonists, or even convicts, headed out steerage under primitive conditions.

Her destination is Pallas, which at the moment is 4 AU from Earth, and she carries 20,000 tons of cargo, mostly finished goods, tools, and other high-value items they don't make out in the Belt yet. Her cargo and passengers were sent up to Earth orbit by laser launchers; *Agamemnon* will never set down on anything larger than an asteroid.

She boosts out at 10 cm/sec², 1/100 gravity, for about 15 days, at which time she's reached about 140

km/second. Now she'll coast for 40 days, then decelerate for another 15. When she arrives at Pallas she'll mass 28,000 tons. The rest has been burned off as fuel and reaction mass. It's a respectable payload, even so.

The reaction mass must be metallic, and it ought to have a reasonably low boiling point. Cadmium, for example, would do nicely. Present-day ion systems want cesium, but that's a rare metal—liquid, like mercury—and unlikely to be found among the asteroids, or be cheap enough to use as fuel from Earth.

In a pinch I suppose she could use iron for reaction mass. There's certainly plenty of that in the Belt. But iron boils at high temperatures, and running iron vapor through them would probably make an unholy mess out of the ionizing screens. The screens would have to be made of something that won't melt at iron vapor temperatures. Better, then, to use cadmium if you can get it.

The fuel would be hydrogen, or, more likely, deuterium, which they'll call "dee". Dee is "heavy hydrogen", in that it has an extra neutron, and seems to work better for fusion. We can assume that it's available in tens-of-ton quantities in the asteroids. After all, there should be water ice out there, and we've got plenty of power to melt it and take out hydrogen, then separate out the dee.

If it turns out there's no dee in the asteroids it's not a disaster. Shipping dee will become one of the businesses for interplanetary supertankers.

Thus we have the basis for an economy. Whatever people go to the Belt for, they'll need goods from Earth to keep them alive at first. Later they'll make a lot of their own, and undoubtedly there will be specialization. One rock will produce water, another steel, and yet another will attract technicians and set up industry. One may even specialize in food production.

Travel times are long but not impossible. They change, depending on when you're going where. It costs money to boost cargo all the way, so bulk stuff like metals and ice may be put in the "pipeline": given enough delta-v to put the cargo into a transfer orbit. Anywhere from a year to several years later the cargo will arrive at its destination. If there are steady insertions, the deliveries are quite regular after that first long wait.

Speculators may buy up "futures" in various goods, thus helping capitalize the delivery system.

People wouldn't travel from rock to rock much. Thus each inhabited asteroid will tend to develop its own peculiar culture and *mores*. On the other hand, they will communicate easily enough. They can receive educational television from more advanced colonies. They can exchange both technical and artistic

programs, and generally appreciate each other's problems and achievements.

What kind of people will go out there? Remember that life on Earth is likely to be soft; those going out will be unhappy about something. Bureaucracy, perhaps. Fleeing their spouses. Sent by a judge who wants them off Earth. Adventurers looking to make a fortune. Idealists who want to establish a "truly free society." Fanatics for some cult or another who want to raise their children "properly".

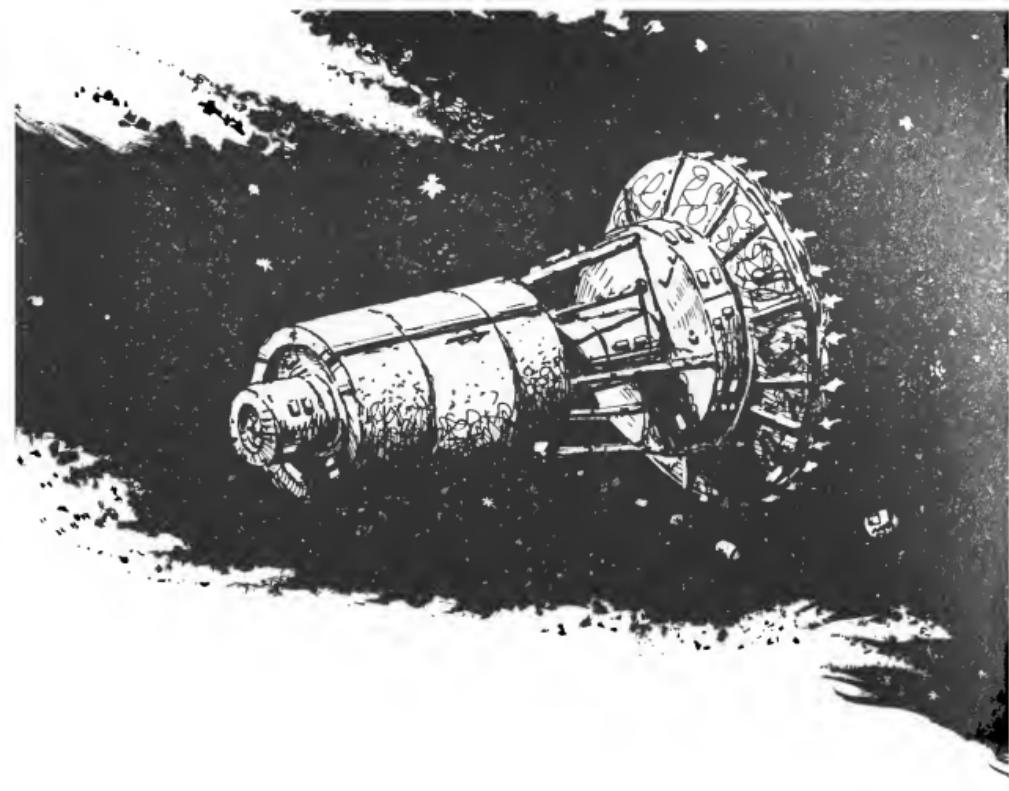
All this begins to sound familiar: something like the colonial period with elements as late as just before WW One.

On the other hand, the "frontier" conditions will be so different from Earth that the Belters may not be too concerned with Earth. What Earth does about them is another story.

Given fusion power, Earth could go either of two ways: fat and happy, ignoring the nuts who want to live on other planets and asteroids—or officious, trying to govern the colonies, and sending up Air Force or Navy ships to enforce edicts set down by bureaucrats who've been outside once for a month and didn't like it.

Obviously there's a story or two in either alternative.

WHAT KIND of government will evolve if the rocks are left to themselves?



Well, each might *seek* independence, but they wouldn't *be* independent. They'd depend entirely too much on commerce. Given the enormous investments required to build the ships that carry that commerce, they'd depend on big monied interests, whether private or government.

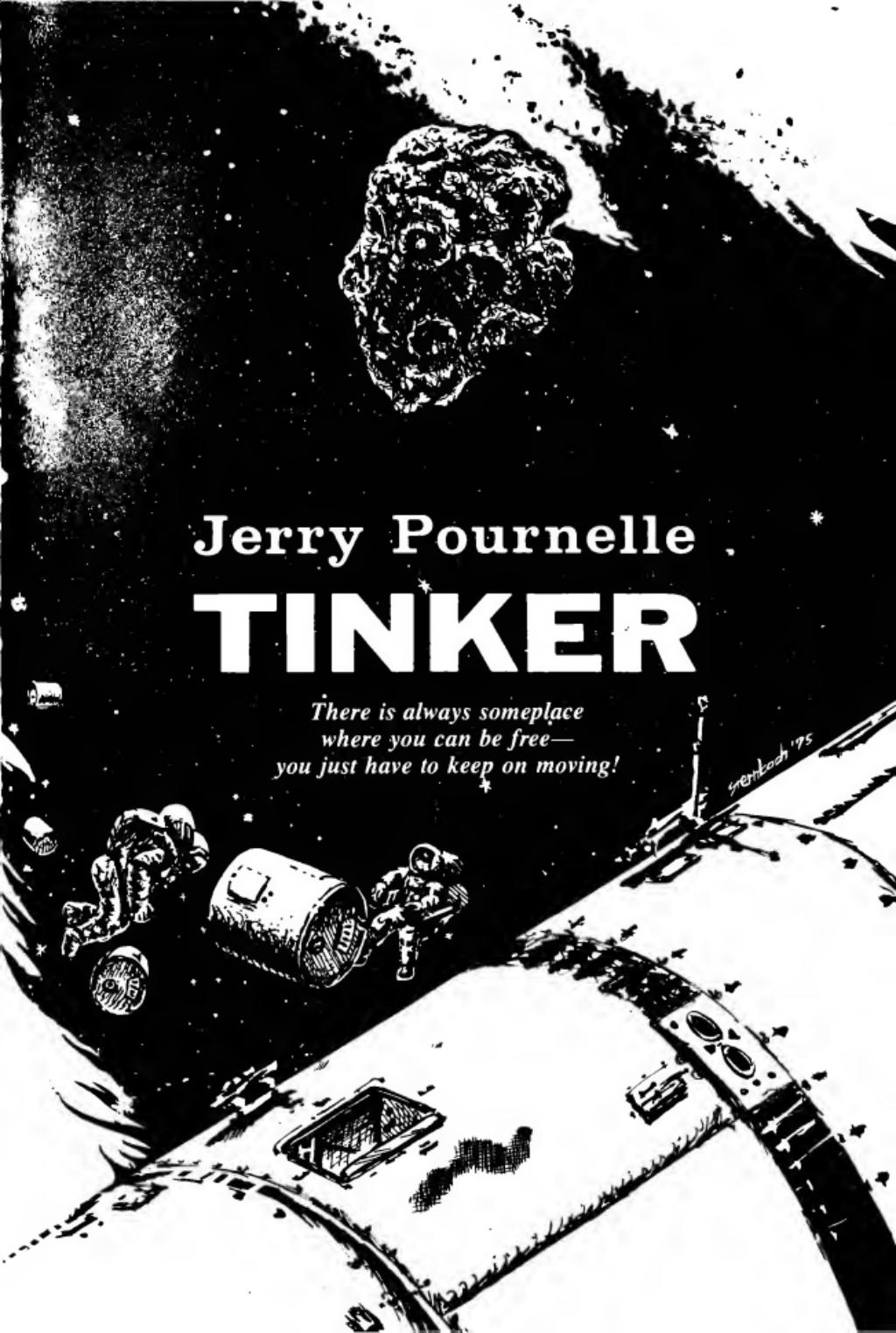
The outfits that control the shipping will make most of the rules, then. They might not reach down into the colonies themselves to spell out laws and regulations, but the big decisions will be theirs. If we envision several large competing companies getting into the act, we can envision more room for Belt

freedom through exploiting that competition.

The corporations themselves will have to set up some kind of corporate "United Nations", simply because you can't do business without enforcement of contracts, reasonably stable currencies, and the like. Their system may or may not be influenced by pressure from Earth—depending on how much Earth even cares.

There are probably other futures that can be built up from ships of this kind, but here is one reasonably consistent picture of life among the asteroids.

I think I might like it. ★



Jerry Pournelle

TINKER

*There is always someplace
where you can be free—
you just have to keep on moving!*

gentlebush '75

“THE TINKER CAME astridin', astridin' over the Strand, with his bullocks—”

“Rollo!”

“Yes, Ma'am.” I'd been singing at the top of my lungs, as I do when I've got a difficult piloting job, and I'd forgotten that my wife was in the control cab. I went back to the problem of setting our 16 thousand tons of ship onto the rock.

It wasn't much of a rock. Jefferson is an irregular-shaped asteroid about twice as far out as Earth. It measures maybe 70 kilometers by 50 kilometers, and from far enough away it looks like an old mud brick somebody used for a shotgun target. It has a screwy rotation pattern that's hard to match with, and since I couldn't use the main engines, setting down was a tricky job.

Janet wasn't finished. “Roland Kephart, I've told you about those songs.”

“Yeah, sure, Hon.” There are two inertial platforms in *Slingshot*, and they were giving me different readings. We were closing faster than I liked.

“It's bad enough that you teach them to the boys. Now the girls are—”

I motioned toward the open intercom switch, and Janet blushed. We fight a lot, but that's our private business.

The attitude jets popped. “Hear this,” I said. “I think we're going in too fast. Brace yourselves.” The jets popped again, short bursts that

stirred up dust storms on the rocky surface below. “But I don't think—”

The ship jolted into place with a loud clang. We hit hard enough to shake things, but none of the red lights came on. “—we'll break anything. Welcome to Jefferson. We're down.”

Janet came over and cut off the intercom switch, and we hugged each other for a second. “Made it again,” she said, and I grinned.

There wasn't much doubt on the last few trips, but when we first put *Slingshot* together out of the wreckage of two salvaged ships, every time we boosted out there'd been a good chance we'd never set down again. There's a lot that can go wrong in the Belt, and not many ships to rescue you.

I pulled her over to me and kissed her. “Sixteen years,” I said. “You don't look a day older.”

She didn't, either. She still had dark red hair, same color as when I met her at Elysium Mons Station on Mars, and if she got it out of a bottle she never told me, not that I'd want to know. She was wearing the same thing I was, a skin-tight body stocking that looked as if it had been sprayed on. The purpose was strictly functional, to keep you alive if *Slinger* sprung a leak, but on her it produced some interesting curves. I let my hands wander to a couple of the more fascinating conic sections, and she snuggled against me.

She put her head close to my ear

and whispered breathlessly, "Comm panel's lit."

"Bat puckey." There was a winking orange light, showing an outside call on our hailing frequency. Janet handed me the mike with a wicked grin. "Lock up your wives and hide your daughters, the tinker's come to town," I told it.

"*Slingshot* this is Freedom Station. Welcome back, Cap'n Rollo."

"Jed?" I asked.

"Who the hell'd you think it was?"

"Anybody. Thought maybe you'd fried yourself in the solar furnace. How are things?" Jed's an old friend. Like a lot of asteroid Port Captains, he's a publican. The owner of the bar nearest the landing area generally gets the job, since there's not enough traffic to make Port Captain a full time deal. Jed used to be a miner in Pallas, and we'd worked together before I got out of the mining business.

We chatted about our families, but Jed didn't seem as interested as he usually is. I figured business wasn't too good. Unlike most asteroid colonies, Jefferson's independent. There's no big Corporation to pay taxes to, but on the other hand there's no big organization to bail the Jeffersonians out if they get in too deep.

"Got a passenger this trip," I said.

"Yeah? Rockrat?" Jed asked.

"Nope. Just passing through. Oswald Dalquist. Insurance adjust-

tor. He's got some kind of policy settlement to make here, then he's with us to Marsport."

There was a long pause, and I wondered what Jed was thinking about. "I'll be aboard in a little," he said. "Freedom Station out."

Janet frowned. "That was abrupt."

"Sure was." I shrugged and began securing the ship. There wasn't much to do. The big work is shutting down the main engines, and we'd done that a long way out from Jefferson. You don't run an ion engine toward an inhabited rock if you care about your customers.

"Better get the Big'uns to look at the inertial platforms, Hon," I said. "They don't read the same."

"Sure. Hal thinks it's the computer."

"Whatever it is, we better get it fixed." That would be a job for the oldest children. Our family divides nicely into the Big Ones, the Little Ones, and the Baby, with various sub-groups and pecking orders that Janet and I don't understand. With nine kids aboard, five ours and four adopted, the system can get confusing. Jan and I find it's easier to let them work out the chain of command for themselves.

I unbuckled from the seat and pushed away. You can't walk on Jefferson, or any of the small rocks. You can't quite swim through the air, either. Locomotion is mostly a matter of jumps.

As I sailed across the cabin a big

grey shape sailed up to meet me, and we met in a tangle of arms and claws. I pushed the tomcat away. "Damn it—"

"Can't you do anything without cursing?"

"Blast it, then. I've told you to keep that animal out of the control cab."

"I didn't let him in." She was snappish, and for that matter so was I. We'd spent better than 600 hours cooped up in a small space with just ourselves, the kids, and our passenger, and it was time we had some outside company.

The passenger had made it more difficult. We don't fight much in front of the kids, but with Oswald Dalquist aboard the atmosphere was different from what we're used to. He was always very formal and polite, which meant we had to be, which meant our usual practice of getting the minor irritations over with had been exchanged for bottling them up.

Jan and I had a major fight coming, and the sooner it happened the better it would be for both of us.

SLINGSHOT is built up out of a number of compartments. We add to the ship as we have to—and when we can afford it. I left Jan to finish shutting down and went below to the living quarters. We'd been down 15 minutes, and the children were loose.

Papers, games, crayons, toys, kids' clothing, and books had all

more or less settled on the "down" side. Raquel, a big bluejay the kids picked up somewhere, screamed from a cage mounted on one bulkhead. The compartment smelled of bird droppings.

Two of the kids were watching a TV program beamed out of Marsport. Their technique was to push themselves upward with their arms and float up to the top of the compartment, then float downward again until they caught themselves just before they landed. It took nearly a minute to make a full circuit in Jefferson's weak gravity.

I went over and switched off the set. The program was a western, some horse opera made in the 1940's.

Jennifer and Craig wailed in unison. "That's *educational*, Dad."

They had a point, but we'd been through this before. For kids who've never seen Earth and may never go there, *anything* about Terra can probably be educational, but I wasn't in a mood to argue. "Get this place cleaned up."

"It's Roger's turn. He made the mess." Jennifer, being eight and two years older than Craig, tends to be spokesman and chief petty officer for the Little Ones.

"Get him to help, then. But get cleaned up."

"Yes, sir." They worked sullenly, flinging the clothing into corner bins, putting the books into the clips, and the games into lockers. There really is a place for every-

thing in *Slingshot*, although most of the time you wouldn't know it.

I left them to their work and went down to the next level. My office is on one side of that, balanced by the "passenger suite" which the second oldest boy uses when we don't have paying customers. Oswald Dalquist was just coming out of his cabin.

"Good Morning, Captain," he said. In all the time he'd been aboard he'd never called me anything but 'Captain', although he accepted Janet's invitation to use her first name. A very formal man, Mr. Oswald Dalquist.

"I'm just going down to reception," I told him. "The Port Captain will be aboard with the Health Officer in a minute. You'd better come down, there will be forms to fill out."

"Certainly. Thank you, Captain." He followed me through the airlock to the level below, which was shops, labs, and the big compartment that serves as a main entryway to *Slingshot*.

Dalquist had been a good passenger, if a little distant. He stayed in his compartment most of the time, did what he was told, and never complained. He had very polished manners, and everything he did was precise, as if he thought out every gesture and word in advance.

I thought of him as a little man, but he wasn't really. I stand about six three, and Dalquist wasn't a lot smaller than me, but he *acted* little.

He worked for Butterworth Insurance, which I'd never heard of, and he said he was a claims adjustor, but I thought he was probably an accountant sent out because they didn't want to send anyone more important to a nothing rock like Jefferson.

Still, he'd been around. He didn't talk much about himself, but every now and then he'd let slip a story that showed he'd been on more rocks than most people; and he knew ship routines pretty well. Nobody had to show him things more than once. Since a lot of life support gadgetry in *Slingshot* is Janet's design, or mine, and certainly isn't standard, he had to be pretty sharp to catch on so quick.

He had expensive gear, too. Nothing flashy, but his helmet was one of Goodyear's latest models, his skintight was David Clark's best with "stretch steel" threads woven in with the nylon, and his coveralls were a special design by Abercrombie and Fitch, with lots of gadget pockets and a self-cleaning low friction surface. It gave him a pretty natty appearance, rather than the battered look the old rockrats have.

I figured Butterworth Insurance must pay their adjustors more than I thought, or else he had a hell of an expense account.

The entryway is a big compartment. It's filled with nearly everything you can think of: dresses, art objects, gadgets and gizmos, spare

parts for air bottles, sewing machines, and anything else Janet or I think we can sell in the way-stops we make with *Slingshot*. Janet calls it the "boutique", and she's been pretty clever about what she buys. It makes a profit, but like everything we do, just barely.

I've heard a lot of stories about tramp ships making a lot of money. Their skippers tell me whenever we meet. Before Jan and I fixed up *Slingshot* I used to believe them. Now I tell the same stories about fortunes made and lost, but the truth is we haven't seen any fortune.

We could use one. Hal, our oldest, wants to go to Marsport Tech, and that's expensive. Worse, he's just the first of nine. Meanwhile, Barclay's wants the payments kept up on the mortgage they hold on *Slinger*, fuel prices go up all the time, and the big Corporations are making it harder for little one-ship outfits like mine to compete.

We got to the boutique just in time to see two figures bounding like wallabies across the big flat area that serves as Jefferson's landing field. Every time one of the men would hit ground he'd fling up a burst of dust that fell like slow-motion bullets to make tiny craters around his footsteps. The landscape was bleak, nothing but rock and craters, with the big steel airlock entrance to Freedom Port the only thing to remind you that several thousand souls lived here.

We couldn't see it, because the

horizon's pretty close on Jefferson, but out beyond the airlock there'd be the usual solar furnaces, big parabolic mirrors to melt down ores. There was also a big trench shimmering just at the horizon: ice. One of Jefferson's main assets is water. About ten thousand years ago Jefferson collided with the head of a comet and a lot of the ice stayed aboard.

The two figures reached *Slingshot* and began the long climb up the ladder to the entrance. They moved fast, and I hit the buttons to open the outer door so they could let themselves in.

Jed was at least twice my age, but like all of us who live in low gravity it's hard to tell just how old that is. He has some wrinkles, but he could pass for fifty. The other guy was a Dr. Stewart, and I didn't know him. There'd been another doctor, about my age, the last time I was in Jefferson, but he'd been a contract man and the Jeffersonians couldn't afford him. Stewart was a young chap, no more than twenty, born in Jefferson back when they called it Grubstake and Blackjack Dan was running the colony. He'd got his training the way most people get an education in the Belt, in front of a TV screen.

The TV classes are all right, but they have their limits. I hoped we wouldn't have any family emergencies here. Janet's a TV Doc, but unlike this Stewart chap she's had a year residency in Marsport General,

and she knows the limits of TV training.

We've got a family policy that she doesn't treat the kids for anything serious if there's another doctor around, but between her and a new TV trained MD there wasn't much choice.

"Everybody healthy?" Jed asked.

"Sure." I took out the log and showed where Janet had entered 'NO COMMUNICABLE DISEASES' and signed it.

Stewart looked doubtful. "I'm supposed to examine everyone myself . . ."

"For Christ's sake," Jed told him. He pulled on his bristly mustache and glared at the young doc. Stewart glared back. "Well, least you can see if they're still warm," Jed conceded. "Cap'n Rollo, you got somebody to take him up while we get the immigration forms taken care of?"

"Sure." I called Pam on the intercom. She's second oldest. When she got to the boutique Jed sent Doctor Stewart up with her. When they were gone he took out a big book of forms.

For some reason every rock wants to know your entire life history before you can get out of your ship. I never have found out what they do with all the information. Dalquist and I began filling out forms while Jed muttered.

"Butterworth Insurance, eh?" Hed asked. "Got much business here?"

Dalquist looked up from the forms. "Very little. Perhaps you can help me. The insured was a Mister Joseph Colella. I will need to find the beneficiary, a Mrs. Barbara Morrison Colella."

"Joe Colella?" I must have sounded surprised because they both looked at me. "I brought Joe and Barbara to Jefferson. Nice people. What happened to him?"

"Death certificate said accident." Jed said it just that way, flat, with no feeling. Then he added, "Signed by Dr. Stewart."

Jed sounded as if he wanted Dalquist to ask him a question, but the insurance man went back to his forms.

When it was obvious that he wasn't going to say anything more, I asked Jed. "Something wrong with the accident?"

Jed shrugged. His lips were tightly drawn. The mood in my ship had definitely changed for the worse, and I was sure Jed had more to say. Why wasn't Dalquist asking questions?

Something else puzzled me. Joe and Barbara were more than just former passengers. They were friends we were looking forward to seeing when we got to Jefferson. I was sure we'd mentioned them several times in front of Dalquist, but he'd never said a word.

We'd taken them to Jefferson about five Earth years before. They were newly married, Joe pushing sixty and Barbara less than half

that. He'd just retired as a field agent for Hansen Enterprises, with a big bonus he'd earned in breaking up some kind of insurance scam. They were looking forward to buying into the Jefferson co-op system. I'd seen them every trip since, the last time two years ago, and they were short of ready money like everyone else in Jefferson, but they seemed happy enough.

"Where's Barbara now?" I asked Jed.

"Working for Westinghouse. Johnny Peregrine's office."

"She all right? And the kids?"

Jed shrugged. "Everybody helps out when help's needed. Nobody's rich."

"They put a lot of money into Jefferson stock," I said. "And didn't they have a mining claim?"

"Dividends on Jefferson Corporation stock won't even pay air taxes." Jed sounded more beat down than I'd ever known him. Even when things had looked pretty bad for us in the old days he'd kept all our spirits up with stupid jokes and puns. Not now. "Their claim wasn't much good to start with, and without Joe to work it—"

His voice trailed off as Pam brought Dr. Stewart back into our compartment. Stewart countersigned the log to certify that we were all healthy. "That's it, then," he said. "Ready to go ashore?"

"People waitin' for you in the Doghouse, Captain Rollo," Jed said. "Big meeting."

"I'll just get my hat."

"If there is no objection, I will come too," Dalquist said. "I wonder if a meeting with Mrs. Colella can be arranged?"

"Sure," I told him. "We'll send for her. Doghouse is pretty well the center of things in Jefferson anyway. Have her come for dinner."

"Got nothing good to serve." Jed's voice was gruff with a note of irritated apology.

"We'll see." I gave him a grin and opened the airlock.

THREE AREN'T any dogs at the Doghouse. Jed had one when he first came to Jefferson, which is why the name, but dogs don't do very well in low gravs. Like everything else in the Belt, the furniture in Jed's bar is iron and glass except for what's aluminum and titanium. The place is a big cave hollowed out of the rock. There's no outside view, and the only things to look at are the TV and the customers.

There was a big crowd, as there always is in the Port Captain's place when a ship comes in. More business is done in bars than offices out here, which was why Janet and the kids hadn't come dirtside with me. The crowd can get rough sometimes.

The Doghouse has a big bar running all the way across on the side opposite the entryway from the main corridor. The bar's got a suction surface to hold down anything set on it, but no stools. The rest of

the big room has tables and chairs and the tables have little clips to hold drinks and papers in place. There are also little booths around the outside perimeter for privacy. It's a typical layout. You can hold auctions in the big central area and make private deals in the booths.

Drinks are served with covers and straws because when you put anything down fast it sloshes out the top. You can spend years learning to drink beer in low gee if you don't want to sip it through a straw or squirt it out of a bulb.

The place was packed. Most of the customers were miners and shopkeepers, but a couple of tables were taken by company reps. I pointed out Johnny Peregrine to Dalquist. "He'll know how to find Barbara."

Dalquist smiled that tight little accountant's smile of his and went over to Peregrine's table.

There were a lot of others. The most important was Habib al Shamlan, the Iris Company factor. He was sitting with two hard cases, probably company cops.

The Jefferson Corporation people didn't have a table. They were at the bar, and the space between them and the other Company reps was clear, a little island of neutral area in the crowded room.

I'd drawn Jefferson's head honcho. Rhoda Hendrix was Chairman of the Board of the Jefferson Corporation, which made her the closest thing they had to a government.

There was a big ugly guy with her. Joe Hornbinder had been around since Blackjack Dan's time. He still dug away at the rocks, hoping to get rich. Most people called him Horny for more than one reason.

It looked like this might be a good day. Everyone stared at us when we came in, but they didn't pay much attention to Dalquist. He was obviously a feather merchant, somebody they might have some fun with later on, and I'd have to watch out for him then, but right now we had important business.

Dalquist talked to Johnny Peregrine for a minute and they seemed to agree on something because Johnny nodded and sent one of his troops out. Dalquist went over into a corner and ordered a drink.

There's a protocol to doing business out here. I had a table all to myself, off to one side of the clear area in the middle, and Jed's boy brought me a big mug of beer with a hinged cap. When I'd had a good slug I took messages out of my pouch and scaled them out to people. Somebody bought me another drink, and there was a general gossip about what was happening around the Belt.

Al Shamlan was impatient. After about a half hour, which is really rushing things for an Arab, he called across, his voice very casual, "And what have you brought us, Captain Kephart?"

I took copies of my manifest out of my pouch and passed them

around. Everyone began reading, but Johnny Peregrine gave a big grin at the first item.

"Beef!" Peregrine looked happy. He had 500 workers to feed.

"Nine tons," I agreed.

"Ten francs," Johnny said. "I'll take the whole lot."

"Fifteen," Al Shamlan said.

I took a big glug of beer and relaxed. Jan and I'd taken a chance and won. Suppose somebody had flung a shipment of beef into transfer orbit a couple of years ago? A hundred tons could be arriving any minute, and mine wouldn't be worth anything.

Janet and I can keep track of scheduled ships, and we know pretty well where most of the tramps like us are going, but there's no way to be sure about goods in the pipeline. You can go broke in this racket.

There was more bidding, with some of the storekeepers getting in the act. I stood to make a good profit, but only the big Corporations were bidding on the whole lot. The Jefferson Corporation people hadn't said a word. I'd heard things weren't going too well for them, but this made it certain. If miners have any money, they'll buy beef. Beef tastes like cow. The stuff you can make from algae is nutritious, but at best it's not appetizing, and Jefferson doesn't even have the plant to make textured vegetable proteins—not that TVP is any substitute for the real thing.

Eventually the price got up to where only Iris and Westinghouse were interested in the whole lot and I broke the cargo up, seven tons to the big boys and the rest in small lots. I didn't forget to save out a couple hundred kilos for Jed, and I donated half a ton for the Jefferson city hall people to throw a feed with. The rest went for about thirty francs a kilo.

That would just about pay for the deuterium I burned up coming to Jefferson. There was some other stuff, lightweight items they don't make outside the big rocks like Pallas, and that was all pure profit. I felt pretty good when the auction ended. It was only the preliminaries, of course, and the main event was what would let me make a couple of payments to Barclay's on *Slinger's* mortgage, but it's a good feeling to know you can't lose money no matter what happens.

There was another round of drinks. Rockrats came over to my table to ask about friends I might have run into. Some of the storekeepers were making new deals, trading around things they'd bought from me. Dalquist came over to sit with me.

"Johnny finding your client for you?" I asked.

He nodded. "Yes. As you suggested, I have invited her to dinner here with us."

"Good enough. Jan and the kids will be in when the business is over."

Johnny Peregrine came over to the Table. "Boosting cargo this trip?"

"Sure." The babble in the room faded out. It was time to start the main event.

The launch window to Luna was open and would be for another couple hundred hours. After that, the fuel needed to give cargo pods enough velocity to put them in transfer orbit to the Earth-Moon system would go up to where nobody could afford to send down anything massy.

There's a lot of traffic to Luna. It's cheaper, at the right time, to send ice down from the Belt than it is to carry it up from Earth. Of course the Lunatics have to wait a couple of years for their water to get there, but there's always plenty in the pipeline. Luna buys metals, too, although they don't pay as much as Earth does.

"I think something can be arranged," al Shamlan said.

"Hah!" Hornbinder was listening to us from his place at the bar. He laughed again. "Iris doesn't have any dee for a big shipment. Neither does Westinghouse. You want to boost, you'll deal with us."

I looked at al Shamlan. It's hard to tell what he's thinking, and not a lot easier to read Johnny Peregrine, but they didn't look very happy. "That true?" I asked.

Hornbinder and Rhoda came over to the table. "Remember, we sent for you," Rhoda said.

"Sure." I had their guarantee in my pouch. Five thousand francs up front, and another five thousand if I got here on time. I'd beaten their deadline by 20 hours, which isn't bad considering how many million kilometers I had to come. "Sounds like you've got a deal in mind."

She grinned. She's a big woman, and as hard as the inside of an asteroid. I knew she had to be sixty, but she had spent most of that time in low gee. There wasn't much cheer in her smile. It looked more like the tomcat does when he's trapped a rat. "Like Horny says, we have all the deuterium. If you want to boost for Iris and Westinghouse, you'll have to deal with us."

"Bloody hell." I wasn't going to do as well out of this trip as I'd thought.

Hornbinder grinned. "How you like it now, you goddam bloodsucker?"

"You mean me?" I asked.

"Fucking A. You come out here and use your goddam ship a hundred hours, and you take more than we get for busting our balls a whole year. Fucking A, I mean you."

I'd forgotten Dalquist was at the table. "If you think boostship captains charge too much, why don't you buy your own ship?" he asked.

"Who the hell are you?" Horny demanded.

Dalquist ignored him. "You don't buy your own ships because

you can't afford them. Ship owners have to make enormous investments. If they don't make good profits they won't buy ships, and you won't get your cargo boosted at any price."

He sounded like a professor. He was right, of course, but he talked in a way that I'd heard the older kids use on the Little Ones. It always starts fights in our family and it looked like having the same result here.

"Shut up and sit down, Horny." Rhoda Hendrix was used to being obeyed. Hornbinder glared at Dalquist, but he took a chair. "Now let's talk business," Rhoda said. "Captain, it's simple enough. We'll charter your ship for the next 700 hours."

"That can get expensive."

She looked to al Shamlan and Peregrine. They didn't look very happy. "I think I know how to get our money back."

"There are times when it is best to give in gracefully," al Shamlan said. He looked to Johnny Peregrine and got a nod. "We are prepared to make a fair agreement with you, Rhoda. After all, you've got to boost your ice. We must send our cargo. It will be much cheaper for all of us if the cargoes go out in one capsule. What are your terms?"

"No deal," Rhoda said. "We'll charter Cap'n Rollo's ship, and you deal with us."

"Don't I get a say in this?" I asked.

"You'll get yours," Hornbinder muttered.

"Fifty thousand," Rhoda said. "Fifty thousand to charter your ship. Plus the ten thousand we promised to get you here."

"That's no more than I'd make boosting your ice," I said. I usually get 5% of cargo value, and the customer furnishes the dee and reaction mass. That ice was worth a couple of million when it arrived at Luna. Jefferson would probably have to sell it before then, but even with discounts, futures in that much water would sell at over a million new francs.

"Seventy thousand, then," Rhoda said.

There was something wrong here. I picked up my beer and took a long swallow. When I put it down, Rhoda was talking again. "Ninety thousand. Plus your ten. An even hundred thousand francs, and you get another 1% of whatever we get for the ice after we sell it."

"A counter offer may be appropriate," al Shamlan said. He was talking to Johnny Peregrine, but he said it loud enough to be sure that everyone else heard him. "Will Westinghouse go halves with Iris on a charter?"

Johnny nodded.

Al Shamlan's smile was deadly. "Charter your ship to us, Captain Kephart. One hundred and forty thousand francs, for exclusive use for the next 600 hours. That price includes boosting a cargo capsule,

provided that we furnish you the deuterium and reaction mass."

"One fifty. Same deal," Rhoda said.

"One seventy five."

"Two hundred." Somebody grabbed her shoulder and tried to say something to her, but Rhoda pushed him away. "I know what I'm doing. Two hundred thousand."

Al Shamian shrugged. "You win. We can wait for the next launch window." He got up from the table. "Coming, Johnny?"

"In a minute." Peregrine had a worried look. "Ms. Hendrix, how do you expect to make a profit? I assure you that we won't pay what you seem to think we will."

"Leave that to me," she said. She still had that look: triumph. The price didn't seem to bother her at all.

"Hum." Al Shamian made a gesture of bafflement. "One thing, Captain. Before you sign with Rhoda, you might ask to see the money. I would be much surprised if Jefferson Corporation has two hundred thousand." He pushed himself away and sailed across the bar to the corridor door. "You know where to find me if things don't work out, Captain Kephart."

He went out, and his company cops came right after him. After a moment Peregrine and the other Corporation people followed.

I wondered what the hell I'd got myself into this time.

RHODA HENDRIX was trying to be friendly. It didn't really suit her style.

I knew she'd come to Jefferson back when it was called Grubstake and Blackjack Dan was trying to set up an independent colony. Sometime in her first year she'd moved in with him, and pretty soon she was handling all his financial deals. There wasn't any nonsense about freedom and democracy back then. Grubstake was a big opportunity to get rich or get killed, and not much more.

When they found Blackjack Dan outside without a helmet, it turned out that Rhoda was his heir. She was the only one who knew what kind of deals he'd made anyway, so she took over his place. A year later she invented the Jefferson Corporation.

Everybody living on the rock had to buy stock, and she talked a lot about sovereign rights and government by the people. It takes a lot of something to govern a few thousand rockrats, and whatever it is, she had plenty. The idea caught on.

Now things didn't seem to be going too well, and her face showed it when she tried to smile. "Glad that's all settled," she said. "How's Janet?"

"The wife is fine, the kids are fine, the ship's fine, and I'm fine," I said.

She let the phoney grin fade out. "OK, if that's the way you want it. Shall we move over to a booth?"

"Why bother? I've got nothing to hide," I told her.

"Watch it," Hornbinder growled.

"And I've had about enough of him," I told Rhoda. "If you've got cargo to boost let's get it boosted."

"In time." She pulled some papers out of her pouch. "First, here's the charter contract."

It was all drawn up in advance. I didn't like it at all. The money was good, but none of this sounded right. "Maybe I should take al Shamlan's advice and—"

"You're not taking the Arabs' advice or their money either," Hornbinder said.

"—and ask to see your money first," I finished.

"Our credit's good," Rhoda said.

"So is mine as long as I keep my payments up. I can't pay off Barclay's with promises." I lifted my beer and flipped the top just enough to suck down a big gulp. Beer's lousy if you have to sip it.

"What can you lose?" Rhoda asked. "OK, so we don't have much cash. We've got a contract for the ice. Ten percent as soon as the Lloyd's man certifies the stuff's in transfer orbit. We'll pay you out of that. We've got the dee, we've got reaction mass, what the hell else do you want?"

"Your radiogram said cash," I reminded her. "I don't even have the retainer you promised. Just paper."

"Things are hard out here."

Rhoda nodded to herself. She was thinking just how hard things were. "It's not like the old days. Everything's organized. Big companies. As soon as we get a little ahead, the big outfits move in and cut prices on everything we sell. Outbid us on everything we have to buy. Like your beef."

"Sure," I said. "I'm facing tough competition from the big shipping fleets, too."

"So this time we've got a chance to hold up the big boys," Rhoda said. "Get a little profit. You aren't hurt. You get more than you expected." She looked around to the other miners. There were a lot of people listening to us. "Kephart, all we have to do is get a little ahead, and we can turn this rock into a decent place to live. A place for people, not Corporation clients!" Her voice rose and her eyes flashed. She meant every word, and the others nodded approval.

"You lied to me," I said.

"So what? How are you hurt?" She pushed the contract papers toward me.

"Excuse me." Dalquist hadn't spoken very loudly, and everyone looked at him. "Why is there such a hurry about this?" he asked.

"What the hell's it to you?" Hornbinder demanded.

"You want cash?" Rhoda asked. "All right, I'll give you cash." She took a document out of her pouch and slammed it onto the table. She hit hard enough to raise herself a

couple of feet out of her chair. It would have been funny if she wasn't dead serious. Nobody laughed.

"There's a deposit certificate for every goddam cent we have!" she shouted. "You want it? Take it all. Take the savings of every family in Jefferson. Pump us dry. Grind the faces of the poor! But sign that charter!"

"Cause if you don't," Hornbinder said, "your ship won't ever leave this rock. And don't think we can't stop you."

"Easy." I tried to look relaxed, but the sea of faces around me wasn't friendly at all. I didn't want to look at them so I looked at the deposit paper. It was genuine enough: you can't fake the molecular documents Zurich banks use. With the Jefferson Corporation Seal and the right signatures and thumbprints that thing was worth exactly 78,500 francs.

It would be a lot of money if I owned it for myself. It wasn't so much compared to the mortgage on *Slinger*. It was nothing at all for the total assets of a whole community.

"This is our chance to get out from under," Rhoda was saying. She wasn't talking to me. "We can squeeze the goddam corporation people for a change. All we need is that charter and we've got Westinghouse and the Arabs where we want them!"

Everybody in the bar was shouting now. It looked ugly, and I

didn't see any way out.

"OK," I told Rhoda. "Sign over that deposit certificate, and make me out a lien on future assets for the rest. I'll boost your cargo—"

"Boost hell, sign that charter contract," Rhoda said.

"Yeah, I'll do that too. Make out the documents."

"Captain Kephart, is this wise?" Dalquist asked.

"Keep out of this, you little son of a bitch." Horny moved toward Dalquist. "You got no stake in this. Now shut up before I take off the top—"

Dalquist hardly looked up. "Five hundred francs to the first man who coldcocks him," he said carefully. He took his hand out of his pouch, and there was a bill in it.

There was a moment's silence, then four big miners started for Horny.

When it was over, Dalquist was out a thousand, because nobody could decide who got to Hornbinder first.

Even Rhoda was laughing after that was over. The mood changed a little; Hornbinder had never been very popular, and Dalquist was buying for the house. It didn't make any difference about the rest of it, of course. They weren't going to let me off Jefferson without signing that charter contract.

Rhoda sent over to city hall to have the documents made out. When they came I signed, and half the people in the place signed as

witnesses. Dalquist didn't like it, but he ended up as a witness too. For better or worse, *Slingshot* was chartered to the Jefferson Corporation for 700 hours.

The surprise came after I'd signed. I asked Rhoda when she'd be ready to boost.

"Don't worry about it. You'll get the capsule when you need it."

"Bloody hell! You couldn't wait to get me to sign—"

"Aww, just relax, Kephart."

"I don't think you understand. You have half a million tons to boost up to what, five, six kilometers a second." I took out my pocket calculator. "Sixteen tons of deuterium and eleven thousand reaction mass. That's a bloody big load. The fuel feed system's got to be built. It's not something I can just strap on and push off—"

"You'll get what you need," Rhoda said. "We'll let you know when it's time to start work."

* * *

JED PUT US in a private dining room. Janet came in later and I told her about the afternoon. I didn't think she'd like it, but she wasn't as upset as I was.

"We have the money," she said. "And we got a good price on the cargo, and if they ever pay off we'll get more than we expected on the boost charges. If they don't pay up—well, so what?"

"Except that we've got a couple

of major companies unhappy, and they'll be here long after Jefferson folds up. Sorry Jed, but—"

He bristled his mustache. "Could be. I figure on gettin' along with the corporations too. Just in case."

"But what did all that lot mean?" Dalquist asked.

"Beats me." Jed shook his head. "Rhoda's been making noises about how rich we're going to be. New furnace, another power plant, maybe even a ship of our own. Nobody knows how she's planning on doing it."

"Could there have been a big strike?" Dalquist asked. "Iridium, one of the really valuable metals?"

"Don't see how," Jed told him. "Look, Mister, if Rhoda's goin' to bail this place out of the hole the big boys have dug for us, that's great with me. I don't ask questions."

Jed's boy came in. "There's a lady to see you."

Barbara Morrison Colella was a small blonde girl, pug nose, blue eyes. She looks like somebody you'd see on Earthside TV playing a dumb blonde.

Her degrees said "family economics," which I guess on Earth doesn't amount to much. Out here it's a specialty. To keep a family going out here you better know a lot of environment and life support engineering, something about prices that depend on orbits and launch windows, a lot about how to get food out of rocks—and something about power systems, too.

She was glad enough to see us, especially Janet, but we got another surprise. She looked at Dalquist and said, "Hello, Buck."

"Hello. Surprised, Bobby?"

"No. I knew you'd be along as soon as you heard."

"You know each other, then," I said.

"Yes." Dalquist hadn't moved, but he didn't look like a little man any longer. "How did it happen, Bobby?"

Her face didn't change. She'd lost most of her smile when she saw Dalquist. She looked at the rest of us, and pointed at Jed. "Ask him. He knows more than I do."

"Mr. Anderson?" Dalquist prompted. His tone made it sound as if he'd done this before, and he expected to be answered.

If Jed resented that he didn't show it. "Simple enough. Joe always seemed happy enough when he came in here after his shift—"

Dalquist looked from Jed to Barbara. She nodded.

"—until the last time. That night he got stinking drunk. Kept mutterin' something about 'Not that way. There's got to be another way.' "

"Do you know what that meant?"

"No," Jed said. "But he kept saying it. Then he got really stinking and I sent him home with a couple of the guys he worked with."

"What happened when he got home?" Dalquist asked.

"He never came home, Buck,"

Barbara said. "I got worried about him, but I couldn't find him. The men he'd left here with said he'd got to feeling better and left them—"

"Damn fools," Jed muttered. "He was right out of it. Nobody should go outside with that much to drink."

"And they found him outside?"

"At the refinery. Helmet busted open. Been dead five, six hours. Held the inquest right in here, at that table al Shamlan was sitting at this afternoon."

"Who held the inquest?" Dalquist asked.

"Rhoda."

"Doesn't make sense," I said.

"No," Janet didn't like it much either. "Barbara, don't you have any idea of what Joe meant? Was he worried about something?"

"Nothing he told me about. He wasn't—we weren't fighting or anything. I'm sure he didn't—"

"Humpf." Dalquist shook his head. "What damned fool suggested suicide?"

"Well," Jed said, "you know how it is. If a man takes on a big load and wanders around outside, it might as well be suicide. Hornbinder said we were doing Barbara a favor, voting it an accident."

Dalquist took papers out of his pouch. "He was right, of course. I wonder if Hornbinder knew that all Hansen employees receive a paid up insurance policy as one of their retirement benefits?"

"I didn't know it," I said.
Janet was more practical. "How much is it worth?"

"I am not sure of the exact amounts," Dalquist said. "There are trust accounts involved also. Sufficient to get Barbara and the children back to Mars and pay for their living expenses there. Assuming you want to go?"

"I don't know," Barbara said. "Let me think about it. Joe and I came here to get away from the big companies. I don't have to like Rhoda and the city hall crowd to appreciate what we've got in Jefferson. Independence is worth something."

"Indeed," Dalquist said. He wasn't agreeing with her, and suddenly we all knew he and Barbara had been through this argument before. I wondered when.

"Janet, what would you do?" Barbara asked.

Jan shrugged. "Not a fair question. Roland and I made that decision a long time ago. But neither of us is alone." She reached for my hand across the table.

As she'd said, we made our choice. We've had plenty of offers for *Slingshot*, from outfits that would be happy to hire us as crew for *Slinger*. It would mean no more hustle to meet the mortgage payments, and not a lot of change in the way we live—but we wouldn't be our own people anymore. We've never seriously considered taking any of the offers.

"You don't have to be alone," Dalquist said.

"I know, Buck." There was a wistful note in Barbara's voice. They looked at each other for a long time. Then we sat down to dinner.

* * *

I WAS IN MY OFFICE aboard *Slingshot*. Thirty hours had gone by since I'd signed the charter contract, and I still didn't know what I was boasting, or when. It didn't make sense.

Janet refused to worry about it. We'd cabled the money on to Marsport, all of Jefferson's treasury and what we'd got for our cargo, so Barclay's was happy for a while. We had enough deuterium aboard *Slinger* to get where we could buy more. She kept asking what there was to worry about, and I didn't have any answer.

I was still brooding about it when Oswald Dalquist tapped on the door.

I hadn't seen him much since the dinner at the Doghouse, and he didn't look any different, but he wasn't the same man. I suppose the change was in me. You can't think of a man named 'Buck' the same way you think of an Oswald.

"Sit down," I said. That was formality, of course. It's no harder to stand than sit in the tiny gravity we felt. "I've been meaning to say something about the way you han-

dled Horny. I don't think I've ever seen anybody do that."

His smile was thin, and I guess it hadn't changed either, but it didn't seem like an accountant's smile any more. "It's an interesting story, actually," he said. "A long time ago I was in a big colony ship. Long passage, nothing to do. Discovered the other colonists didn't know much about playing poker."

We exchanged grins again.

"I won so much it made me worry that someone would take it away from me, so I hired the biggest man in the bay to watch my back. Sure enough, some chap accused me of cheating, so I called on my big friend—"

"Yeah?"

"And he shouted 'Fifty to the first guy that decks him.' Worked splendidly, although it wasn't precisely what I'd expected when I hired him—"

We had our laugh.

"When are we leaving, Captain Kephart?"

"Beats me. When they get the cargo ready to boost, I guess."

"That might be a long time," Dalquist said.

"What does that mean?"

"I've been asking around. To the best of my knowledge, there are no preparations for boosting a big cargo pod."

"That's stupid," I said. "Well, it's their business. When we go, how many passengers am I going to have?"

His little smile faded entirely. "I wish I knew. You've guessed that Joe Colella and I were old friends. And rivals for the same girl."

"Yeah. I'm wondering why you—hell, we talked about them on the way in. You never let on you'd ever heard of them."

He nodded carefully. "I wanted to be certain. I only knew that Joe was supposed to have died in an accident. He was not the kind of man accidents happen to. Not even out here."

"What is that supposed to mean?"

"Only that Joe Colella was one of the most careful men you will ever meet, and I didn't care to discuss my business with Barbara until I knew more about the situation in Jefferson. Now I'm beginning to wonder—"

"Dad!" Pam was on watch, and she sounded excited. The intercom box said again, "Dad!"

"Right, sweetheart."

"You better come up quick. There's a message coming through. You better hurry."

"MAYDAY MAYDAY MAYDAY." The voice was cold and unemotional, the way they are when they really mean it. It rolled off the tape Pam had made. **"MAYDAY MAYDAY MAYDAY. THIS IS PEGASUS LINES BOOSTSHIP AGAMEMNON OUTBOUND EARTH TO PALLAS. OUR MAIN ENGINES ARE DISABLED. I**

SAY AGAIN, MAIN ENGINES DISABLED. OUR VELOCITY RELATIVE TO SOL IS ONE FOUR ZERO KILOMETERS PER SECOND, I SAY AGAIN, ONE HUNDRED FORTY KILOMETERS PER SECOND. AUXILIARY POWER IS FAILING. MAIN ENGINES CANNOT BE REPAIRED. PRESENT SHIP MASS IS 54,000 TONS. SEVENTEEN HUNDRED PASSENGERS ABOARD. MAYDAY MAYDAY MAYDAY."

"Lord God." I wasn't really aware that I was talking. The kids had crowded into the control cabin, and we listened as the tape went on to give a string of numbers, the vectors to locate *Agamemnon* precisely. I started to punch them into the plotting tanks, but Pam stopped me.

"I already did that, Dad." She hit the activation switch to bring the screen to life.

It showed a picture of our side of the Solar System, the inner planets and inhabited rocks, along with a block of numbers and a long thin line with a dot at the end to represent *Agamemnon*. Other dots winked on and off: boostships.

We were the only one that stood a prayer of a chance of catching up with *Agamemnon*.

The other screen lit, giving us what the *Register* knew about *Agamemnon*. It didn't look good. She was an enormous old cargo/passenger ship, over thirty years old—and out here that's old indeed.

She'd been built for a useful life of half that, and sold off to Pegasus lines when P&L decided she wasn't safe.

Her auxiliary power was furnished by a plutonium pile. If something went wrong with it, there was no way to repair it in space. Without auxiliary power, the life support systems couldn't function. I was still looking at her specs when the comm panel lit. Local call, Port Captain's frequency.

"Yeah, Jed?" I said.

"You've got the Mayday?"

"Sure. I figure we've got about 60 hours max to fuel up and still let me catch her. I've got to try it, of course."

"Certainly, Captain." The voice was Rhoda's. "I've already sent a crew to start work on the fuel pod. I suggest you work with them to be sure it's right."

"Yeah. They'll have to work damned fast." *Slingshot* doesn't carry anything like the tankage a run like this would need.

"One more thing, Captain," Rhoda said. "Remember that your ship is under exclusive charter to the Jefferson Corporation. We'll make the legal arrangements with Pegasus. You concentrate on getting your ship ready."

"Yeah, OK. Out." I switched the comm system to *record*. "Agamemnon, this is cargo tug *Slingshot*. I have your Mayday. Intercept is possible, but I cannot carry sufficient fuel and mass to de-

celerate your ship. I must vampire your dee and mass, I say again, we must transfer your fuel and reaction mass to my ship.

"We have no facilities for taking your passengers aboard. We will attempt to take your ship in tow and decelerate using your deuterium and reaction mass. Our engines are modified General Electric Model five-niner ion-fusion. Preparations for coming to your assistance are under way. Suggest your crew begin preparations for fuel transfer. Over."

Then I looked around the cabin. Janet and our oldest were ashore. "Pam, you're in charge. Send that, and record the reply. You can start the checklist for boost. I make it about 200 centimeters acceleration, but you'd better check that. Whatever it is, we'll need to secure for it. Also, get in a call to find your mother. God knows where she is."

"Sure, Dad." She looked very serious, and I wasn't worried. Hal's the oldest, but Pam's a lot more thorough.

The *Register* didn't give anywhere near enough data about *Agamemnon*. I could see from the recognition pix that she carried her reaction mass in strap-ons alongside the main hull, rather than in detachable pods right forward the way *Slinger* does. That meant we might have to transfer the whole lot before we could start deceleration.

She had been built as a general purpose ship, so her hull structure

forward was beefy enough to take the thrust of a cargo pod—but how much thrust? If we were going to get her down, we'd have to push like hell on her bows, and there was no way to tell if they were strong enough to take it.

I looked over to where Pam was aiming our high gain antenna for the message to *Agamemnon*. She looked like she'd been doing this all her life, which I guess she had been, but mostly for drills. It gave me a funny feeling to know she'd grown up sometime in the last couple of years and Janet and I hadn't really noticed.

"Pamela, I'm going to need more information on *Agamemnon*," I told her. "The kids had a TV cast out of Marsport, so you ought to be able to get through. Ask for anything they have on that ship. Structural strength, fuel handling equipment, everything they've got."

"Yes, sir."

"OK. I'm going ashore to see about the fuel pods. Call me when we get some answers, but if there's nothing important from *Agamemnon* just hang onto it."

"What happens if we can't catch them?" Phillip asked.

Pam and Jennifer were trying to explain it to him as I went down to the lock.

* * *

JEAD HAD LUNCH waiting in the Doghouse. "How's it going?" he

asked when I came in.

"Pretty good. Damned good, all things considered." The refinery crew had built up fuel pods for *Slinger* before, so they knew what I needed, but they'd never made one that had to stand up to a full fifth of a gee. A couple of centimeters is hefty acceleration when you boost big cargo, but we'd have to go out at a hundred times that.

"Get the stuff from Marsport?"

"Some of it." I shook my head. The whole operation would be tricky. There wasn't a lot of risk for me, but *Agamemnon* was in big trouble.

"Rhoda's waiting for you. Back room."

"You don't look happy."

Jed shrugged. "Guess she's right, but it's kind of ghoulish."

"What—?"

"Go see."

Rhoda was sitting with a trim chap who wore a clipped mustache. I'd met him before, of course: B. Elton, Esq., the Lloyd's rep in Jefferson. He hated the place and couldn't wait for a transfer.

"I consider this reprehensible," Elton was saying when I came in. "I hate to think you are a party to this, Captain Kephart."

"Party to what?"

"Ms. Hendrix has asked for thirty million francs as salvage fee. Ten million in advance."

I whistled. "That's heavy."

"The ship is worth far more than that," Rhoda said.

"If I can get her down. There are plenty of problems—hell, she may not be fit for more than salvage," I said.

"Then there are the passengers. How much is Lloyd's out if you have to pay off their policies? And lawsuits?" Rhoda had the tomcat's grin again. "We're saving you money, Mr. Elton."

I realized what she was doing. "I don't know how to say this, but it's my ship you're risking."

"You'll be paid well," Rhoda said. "Ten percent of what we get."

That would just about pay off the whole mortgage. It was also a hell of a lot more than the commissioners in Marsport would award for a salvage job.

"We've got heavy expenses up front," Rhoda was saying. "That fuel pod costs like crazy. We're going to miss the launch window to Luna."

"Certainly you deserve reasonable compensation, but—"

"But nothing!" Rhoda's grin was triumphant. "Captain Kephart can't boost without fuel, and we have it all. That fuel goes aboard his ship when you've signed my contract, Elton, and not before."

Elton looked sad and disgusted. "It seems a cheap—"

"Cheap!" Rhoda got up and went to the door. "What the hell do you know about cheap? How god-dam many times have we heard you people say there's no such thing as

an excess profit? Well, this time we got the breaks, Elton, and we'll take the excess profits. Think about that."

Out in the bar somebody cheered. Another began singing a tune I'd heard in Jefferson before. Pam says the music is very old, she's heard it on TV casts, but the words fit Jefferson. The chorus goes "THERE'S GONNA BE A GREAT DAY!" and everybody out there shouted it.

"Marsport will never give you that much money," Elton said.

"Sure they will." Rhoda's grin got even wider, if that was possible. "We'll hold onto the cargo until they do—"

"Be damned if I will!" I said.

"Not you at all. I'm sending Mr. Hornbinder to take charge of that. Don't worry, Captain Kephart, I've got you covered. The big boys won't bite you."

"Hornbinder?"

"Sure. You'll have some extra passengers this run—"

"Not him. Not in my ship."

"Sure he's going. You can use some help—"

Like hell. "I don't need any."

She shrugged. "Sorry you feel that way. Just remember, you're under charter." She gave the tomcat grin again and left.

When she was gone Jed came in with beer for me and something else for Elton. They were still singing and cheering in the other room.

"Do you think this is fair?" Elton demanded.

Jed shrugged. "Doesn't matter what I think. Or what Rollo thinks. Determined woman, Rhoda Hendrix."

"You'd have no trouble over ignoring that charter contract," Elton told me. "In fact, we could find a reasonable bonus for you—"

"Forget it." I took the beer from Jed and drank it all. Welding up that fuel pod had been hot work, and I was ready for three more. "Listen to them out there," I said. "Think I want them mad at me? They see this as the end of their troubles."

"Which it could be," Jed said. "With a few million to invest we can make Jefferson into a pretty good place."

Elton wasn't having any. "Lloyd's is not in the business of subsidizing colonies that cannot make a living—"

"So what?" I said. "Rhoda's got the dee and nobody else had enough. She means it, you know."

"There's less than 40 hours," Jed reminded him. "I think I'd get on the line to my bosses, was I you."

"Yes." Elton had recovered his polish, but his eyes were narrow. "I'll just do that."

THEY LAUNCHED the big fuel pod with strap-on solids, just enough thrust to get it away from the rock so I could catch it and lock on. We had hours to spare, and I took my time matching velocities. Then Hal

and I went outside to make sure everything was connected right.

Hornbinder and two friends were aboard against all my protests. They wanted to come out with us, but I wasn't having any. We don't need help from groundpounders. Janet and Pam took them to the galley for coffee while I made my inspection.

Slingshot is basically a strongly built hollow tube with engines at one end and clamps at the other. The cabins are rings around the outside of the tube. We also carry some deuterium and reaction mass strapped on to the main hull, but for big jobs there's not nearly enough room there. Instead, we build a special fuel pod that straps onto the bow. The reaction mass can be lowered through the central tube when we're boosting.

Boost cargo goes on forward of the fuel pod. This time we didn't have any going out, but when we caught up to *Agamemnon* she'd ride there, no different from any other cargo capsule. That was the plan, anyway. Taking another ship in tow isn't precisely common out here.

Everything matched up. Deuterium lines, and the elevator system for handling the mass and getting it into the boiling pots aft; it all fit. Took our time, even after we were sure it was working, while the miners who'd come up with the pod fussed and worried. Eventually I was satisfied and they got to head for home. I was still waiting for a call from Janet.

Just before they were ready to start up she hailed us. She used an open frequency so the miners could hear. "Rollo, I'm afraid those crewmen Rhoda loaned us will have to go home with the others."

"Eh?" One of the miners turned around in the saddle.

"What's the problem, Jan?" I asked.

"It seems Mr. Hornbinder and his friends have very bad stomach problems. It could be quite serious. I think they'd better see Dr. Stewart as soon as possible."

"Goddam. Rhoda's not going to like this," the foreman said. He maneuvered his little open frame scooter over to the airlock. Pam brought his friends out and saw they were strapped in.

"Hurry up!" Hornbinder said. "Get moving!"

"Sure, Horny." There was a puzzled note in the foreman's voice. He started up the bike. At maximum thrust it might make a twentieth of a gee. There was no enclosed space, it was just a small chemical rocket with saddles, and you rode it in your suit.

"Goddamit, get moving," Hornbinder was shouting. If there'd been air you might have heard him a klick away. "You can make better time than this!"

I got inside and went up to the control cabin. Jan was grinning.

"Amazing what calomel can do," she said.

"Amazing." We took time off

for a quick kiss before I strapped in. I didn't feel much sympathy for Horny, but the other two hadn't been so bad. The one to feel sorry for was whoever had to clean up their suits.

Ship's engines are complicated things. First you take deuterium pellets and zap them with a big laser. The dee fuses to helium. Now you've got far too much hot gas at far too high a temperature, so it goes into an MHD system that cools it and converts the energy into electricity.

Some of that powers the lasers to zap more dee. The rest powers the ion drive system. Take a metal, preferably something with a low boiling point like cesium, but since that's rare out here cadmium generally has to do. Boil it to a vapor. Put the vapor through ionizing screens that you keep charged with power from the fusion system.

Squirt the charged vapor through more charged plates to accelerate it, and you've got a drive. You've also got a charge on your ship, so you need an electron gun to get rid of that.

There are only about nine hundred things to go wrong with the system. Superconductors for the magnetic fields and charge plates: those take cryogenic systems, and those have auxiliary systems to keep them going. Nothing's simple, and nothing's small, so out of *Slingshot's* 1600 metric tons, well over a thousand tons is engine.

Now you know why there aren't any space yachts flitting around out here. *Slinger's* one of the smallest ships in commission, and she's bloody big. If Jan and I hadn't happened to hit lucky by being the only possible buyers for a couple of wrecks, and hadn't had friends at Barclay's who thought we might make a go of it, we'd never have owned our own ship.

When I tell people about the engines they don't ask what we do aboard *Slinger* when we're on long passages, but they're only partly right. You can't do anything to an engine while it's on. It either works or it doesn't, and all you have to do with it is see it gets fed.

It's when the damned things are shut down that the work starts, and that takes so much time that you make sure you've done everything else in the ship when you can't work on the engines. There's a lot of maintenance, as you might guess when you consider that we've got to make everything we need, from air to zweiback. Living in a ship makes you appreciate planets.

Space operations go smooth, or generally they don't go at all. I looked at Jan and we gave each other a quick wink. It's a good luck charm we've developed. Then I hit the keys, and we were off.

IT WASN'T a long boost to catch up with *Agamemnon*. I spent most of it in the contoured chair in front of the control screens. A fifth of a gee

isn't much for dirtsiders, but out here it's ten times what we're used to. Even the cats hate it.

The high gees saved us on high calcium foods and the drugs we need to keep going in low gravs, and of course we didn't have to put in so much time in the exercise harnesses, but the only one happy about it was Dalquist. He came up to the control cab about an hour out from Jefferson.

"I thought there would be other passengers," he said.

"Really? Barbara made it pretty clear that she wasn't interested in Pallas. Might go to Mars, but—"

"No, I meant Mr. Hornbinder."

"He, uh, seems to have become ill. So did his friends. Happened quite suddenly."

Dalquist frowned. "I wish you hadn't done that."

"Really? Why?"

"It might not have been wise, Captain."

I turned away from the screens to face him. "Look, Mr. Dalquist, I'm not sure what *you're* doing on this trip. I sure didn't need Rhoda's goons along."

"Yes. Well, there's nothing to be done now, in any event."

"Just why are you aboard? I thought you were in a hurry to get back to Marsport—"

"Butterworth interests may be affected, Captain. And I'm in no hurry."

That's all he had to say about it, too, no matter how hard I pressed

him on it.

I didn't have time to worry about it. As we boosted I was talking with *Agamemnon*. She passed about half a million kilometers from Jefferson, which is awfully close out here. We'd started boosting before she was abreast of the rock, and now we were chasing her. The idea was to catch up to her just as we matched her velocity. Meanwhile, *Agamemnon*'s crew had their work cut out.

* * *

WHEN WE WERE fifty kilometers behind, I cut the engines to minimum power. I didn't dare shut them down entirely. The fusion power system offers no difficulty with re-starts, but the ion screens foul when they're cooled. Unless they're cleaned or replaced we can lose as much as half our thrust—and we were going to need every dyne.

We could just make out *Agamemnon* with our telescope. She was too far away to let us see any details. We could see a bright spot of light approaching us, though: Captain Jason Ewert-James and two of his engineering officers. They were using one of *Agamemnon*'s scooters.

There wasn't anything larger aboard. It's not practical to carry lifeboats for the entire crew and passenger list, so they have none at all on the larger boostships. Earth-

side politicians are forever talking about "requiring" lifeboats on passenger-carrying ships, but they'll never do it. Even if they pass such laws, how could they enforce them? Earth has no cops in space. The US and Soviet Air Forces keep a few ships, but not enough to make an effective police force, even if anyone out here recognized their jurisdiction—which we don't.

Captain Ewert-James was a typical ship captain. He'd formerly been with one of the big British-Swiss lines, and had to transfer over to Pegasus when his ship was sold out from under him. The larger lines like younger skippers, which I think is a mistake, but they don't ask my advice.

Ewert-James was tall and thin, with a clipped mustache and greying hair. He wore uniform coveralls over his skintights, and in the pocket he carried a large pipe which he lit as soon as he'd asked permission.

"Thank you. Didn't dare smoke aboard *Agamemnon*—"

"Air that short?" I asked.

"No, but some of the passengers think it might be. Wouldn't care to annoy them, you know." His lips twitched just a trifle, something less than a conspirator's grin but more than a deadpan.

We went into the office. Jan came in, making it a bit crowded. I introduced her as physician and chief officer.

"How large a crew do you keep,

Captain Kephart?" Ewert-James asked.

"Just us. And the kids. My oldest two are on watch at the moment."

His face didn't change. "Experienced cadets, eh? Well, we'd best be down to it. Mister Haply will show you what we've been able to accomplish."

They'd done quite a lot. There was a lot of expensive alloy bar-stock in the cargo, and somehow they'd got a good bit of it forward and used it to brace up the bows of the ship so she could take the thrust. "Haven't been able to weld it properly, though," Haply said. He was a young third engineer, not too long from being a cadet himself. "We don't have enough power to do welding and run the life support too."

Agamemnon's image was a blur on the screen across from my desk. It looked like a gigantic hydra, or a bullwhip with three short lashes standing out from the handle. The three arms rotated slowly. I pointed to it. "Still got spin on her."

"Yes." Ewert-James was grim. "We've been running the ship with that power. Spin her up with attitude jets and take power off the flywheel motor as she slows down."

I was impressed. Spin is usually given by running a big flywheel with an electric motor. Since any motor is a generator, Ewert-James's people had found a novel way to

get some auxiliary power for life support systems.

"Can you run for a while without doing that?" Jan asked. "It won't be easy transferring reaction mass if you can't." We'd already explained why we didn't want to shut down our engines, and there'd be no way to supply *Agamemnon* with power from *Slingshot* until we were coupled together.

"Certainly. Part of our cargo is LOX. We can run twenty, thirty hours without ship's power. Possibly longer."

"Good." I hit the keys to bring the plot-tank results onto my office screen. "There's what I get," I told them. "Our outside time limit is *Slinger*'s maximum thrust. I'd make that 20 centimeters for this load—"

"Which is more than I'd care to see exerted against the bows, Captain Kephart. Even with our bracing." Ewert-James looked to his engineers. They nodded gravely.

"We can't do less than ten," I reminded them. "Anything much lower and we won't make Pallas at all."

"She'll take ten," Haply said. "I think."

The others nodded agreement. I was sure they'd been over this a hundred times as we were closing.

I looked at the plot again. "At the outside, then, we've got 170 hours to transfer twenty-five thousand tons of reaction mass. And we can't work steadily because you'll have to spin up *Agamemnon*

for power, and I can't stop engines—"

Ewert-James turned up both corners of his mouth at that. It seemed to be the closest thing to a smile he ever gave. "I'd say we best get at it, wouldn't you?"

AGAMEMNON didn't look much like *Slingshot*. We'd closed to a quarter of a klick, and steadily drew ahead of her; when we were past her we'd turn over and decelerate, dropping behind so that we could do the whole cycle over again.

Some features were the same, of course. The engines were not much larger than *Slingshot*'s, and looked much the same, a big cylinder covered over with tankage and coils, acceleration outports at the aft end. A smaller tube ran from the engines forward, but you couldn't see all of it because big rounded reaction mass cannisters covered a portion.

Up forward the arms grew out of another cylinder. They jutted out at equal angles around the hull, three big arms to contain passenger decks and auxiliary systems. The arms could be folded in between the reaction mass cannisters, and would be when we started boosting.

All told she was over four hundred meters long, and with the hundred-meter arms thrust out she looked like a monstrous hydra slowly spinning in space.

"There doesn't seem to be anything wrong aft," Buck Dalquist said. He studied the ship from the

screens, then pulled the telescope eyepiece toward himself for a direct look.

"Failure in the superconductor system," I told him. "Broken lines. They can't contain the fusion reaction long enough to get it into the MHD system."

He nodded. "So Captain Ewert-James told me. I've asked for a chance to inspect the damage as soon as it's convenient."

"Eh? Why?"

"Oh, come now, Captain." Dalquist was still looking through the telescope. "Surely you don't believe in Rhoda Hendrix as a good luck charm?"

"But—"

"But nothing." There was no humor in his voice, and when he looked across the cabin at me there was none in his eyes. "She bid far too much for an exclusive charter, after first making certain that you'd be on Jefferson at precisely the proper time. She has bankrupted the corporate treasury to obtain a corner on deuterium. Why else would she do all that if she hadn't expected to collect it back with profit?"

"But—she was going to charge Westinghouse and Iris and the others to boost their cargo. And they had cargo of their own—"

"Did they? We saw no signs of it. And she bid far too much for your charter."

"Damn it, you can't believe that," I said, but I didn't mean it. I remembered the atmosphere back at

Jefferson. "You think the whole outfit was in on it?"

He shrugged. "Does it matter?"

THE FUEL TRANSFER was tough. We couldn't just come alongside and winch the stuff over. At first we caught it on the fly: *Agamemnon's* crew would fling out hundred-ton cannisters, then use the attitude jets to boost away from them, not far, but just enough to stand clear.

Then I caught them with a bow pod. It wasn't easy. You don't need much closing velocity with a hundred tons before you've got a hell of a lot of energy to worry about. Weightless doesn't mean massless.

We could only transfer about four hundred tons an hour that way. After the first ten hour stretch I decided it wouldn't work. There were just too many ways for things to go wrong.

"Get rigged for tow," I told Captain Ewert-James. "Once we're hooked up I can feed you power, so you don't have to do that crazy stunt with the spin. I'll start boost at about a tenth of a centimeter. It'll keep the screens hot, and we can winch the fuel pods down."

He was ready to agree. I think watching me try to catch those fuel cannisters, knowing that if I made a mistake his ship was headed for Saturn and beyond, was giving him ulcers.

First he spun her hard to build up

power, then slowed the spin to nothing. The long arms folded alongside, so that *Agamemnon* took on a trim shape. Meanwhile I worked around in front of her, turned over and boosted in the direction we were travelling, and turned again.

The dopplers worked fine for a change. We hardly felt the jolt as *Agamemnon* settled nose to nose with us. Her crewmen came out to work the clamps and string lines across to carry power. We were linked, and the rest of the trip was nothing but hard work.

We could still transfer no more than 400 tons an hour, meaning bloody hard work to get the whole 25,000 tons into Slinger's fuel pod, but at least it was all downhill. Each cannister was lowered by winch, then swung into our own fuel-handling system where *Slinger's* winches took over. Cadmium's heavy: a cube about two meters on a side weighs a hundred tons. It wasn't big, and it didn't weigh much in a tenth of a centimeter, but you don't drop the stuff either.

Finally it was finished, and we could start maximum boost: a whole ten centimeters, about a hundredth of a gee. That may not sound like much, but think of the mass involved. Slinger's 1600 tons were nothing, but there was *Agamemnon* too. I worried about the bracing Ewert-James had put in the bows, but nothing happened.

Three hundred hours later we

were down at Pallasport. As soon as we touched in my ship was surrounded by Intertel cops.

* * *

THE ROOM was paneled in real wood. That doesn't sound like much unless you live in the Belt—but think about it: every bit of that paneling was brought across 60 million kilometers.

Pallas hasn't much in the way of gravity, but there's enough to make sitting down worth doing. Besides, it's a habit we don't seem to be able to get out of. There was a big conference table across the middle of the room, and a dozen corporation reps sat at it. It was made of some kind of plastic that looks like wood; not even the Commission brings furniture from Earth.

Deputy Commissioner Ruth Carr sat at a table at the far end, across the big conference table from where I sat in the nominal custody of the Intertel guards. I wasn't happy about being arrested and my ship impounded. Not that it would do me any good to be unhappy. . .

All the big outfits were represented at the conference table. Lloyd's and Pegasus Lines, of course, but there were others, Hansen Enterprises, Westinghouse, Iris, GE, and the rest.

"Definitely sabotage, then?" Commissioner Carr asked. She looked much older than she really was; the black coveralls and cap did that. She'd done a good job of con-

ducting the hearings, though, even sending Captain Ewert-James and his engineers out to get new photographs of the damage to *Agamemnon's* engines. He passed them up from the witness box, and she handed them to her experts at their place to her right.

They nodded over them.

"I'd say definitely so," Captain Ewert-James was saying. "There was an attempt to lay the charge pattern such that it might be mistaken for meteorite damage. In fact, had not Mr. Dalquist been so insistent on a thorough examination, we might have let it go at that. On close inspection, though, it seems very probable that a series of shaped charges were used."

Ruth Carr nodded to herself. She'd heard me tell about Rhoda's frantic efforts to charter my ship. One of Ewert-James's officers testified that an engineering crewman jumped ship just before *Agamemnon* boosted out of Earth orbit. The Intertel people had dug up the fact that he'd lived on Jefferson two years before, and were trying to track him down now—he'd vanished.

"The only possible beneficiary would be the Jefferson Corporation," Mrs. Carr said. "The concerns most harmed are Lloyd's and Pegasus Lines—"

"And Hansen Enterprises," the Hansen rep said. Ruth Carr looked annoyed but she didn't say anything. I noticed that the big outfits

felt free to interrupt her and wondered if they did that with all the Commissioners, or just her because she hadn't been at the job very long.

The Hansen man was an older chap who looked as if he'd done his share of rock mining in his day, but he spoke with a Harvard accent. "There is a strong possibility that the Jefferson Corporation arranged the murder of a retired Hansen employee. As he was insured by a Hansen subsidiary, we are quite concerned."

"Quite right." Mrs. Carr jotted notes on the pad in front of her. She was the only one there I'd seen use note paper. The others whispered into wrist recorders. "Before we hear proposed actions, has anyone an objection to disposing of the matter concerning Captain Kephart?"

Nobody said anything.

"I find that Captain Kephart has acted quite properly, and that the salvage fees should go to his ship."

I realized I'd been holding my breath. Nobody wanted my scalp so far as I knew, and Dalquist had been careful to show I wasn't involved in whatever Rhoda had planned—but still, you never know what'll happen when the big boys have their eye on you. It was a relief to hear her dismiss the whole business, and the salvage fees would pay off a big part of the mortgage. I wouldn't know just how much I'd get until the full

Commission back in Marsport acted, but it couldn't come to less than a million francs. Maybe more.

"Now for the matter of the Jefferson Corporation."

"Move that we send sufficient Intertel agents to take possession of the whole damn rock," the Lloyd's man said.

"Second." That was Pegasus Lines.

"Discussion?" Ruth Carr asked.

"Hansen will speak against the motion," the Hansen rep said. "Mr. Dalquist will speak for us."

That surprised hell out of me. I wondered what would happen, and sat quite still, listening. I had no business in there, of course. If there had been some suspicion that I might have been in on Rhoda's scheme I'd never have heard this much, and by rights I ought to have left when she made her ruling, but nobody seemed anxious to throw me out.

"First, let me state the obvious," Dalquist said. "An operation of this size will be costly. The use of naked force against an independent colony, no matter how justified, will have serious repercussions throughout the Belt—"

"Let 'em get away with it and it'll *really* be serious," the Pegasus man said.

"Hansen Enterprises has the floor, Mister Papagorus," Commissioner Carr said.

Dalquist nodded his thanks. "My point is that we should consider al-

ternatives. The proposed action is at least expensive and distasteful, if not positively undesirable."

"We'll concede that," the Lloyd's man said. The others muttered agreement. One of the people representing a whole slew of smaller outfits whispered "Here comes the Hansen hooker. How's Dalquist going to make a profit from this?"

"I further point out," Dalquist said, "that Jefferson is no more valuable than many other asteroids. True, it has good minerals and water, but no richer resources than other rocks we've not developed. The real value of Jefferson is in its having a working colony and labor force—and it is highly unlikely that they will work very hard for us if we land company police and confiscate their homes."

Everybody was listening now. The chap who'd whispered earlier threw his neighbor an 'I told you so' look.

"Secondly. If we take over the Jefferson holdings, the result will be a fight among ourselves over the division of the spoils."

There was another murmur of assent to that. They could all agree that something had to be done, but nobody wanted to let the others have the pie without a cut for himself.

"Finally. It is by no means clear that any large number of Jefferson inhabitants were involved in this conspiracy. Chairman Hendrix, certainly. I could name two or three

others. For the rest—who knows?"

"All right," the Lloyd's man said. "You've made your point. If landing Intertel cops on Jefferson isn't advisable, what do we do? I am damned if we'll let them get away clean."

"I suggest that we invest in the Jefferson Corporation," Dalquist said.

* * *

THE DOGHOUSE hadn't changed. There was a crowd outside in the main room. They were all waiting to hear how rich they'd become. When I came in even Hornbinder smiled at me.

They were getting wild drunk while Dalquist and I met with Rhoda in the back room. She didn't like what he was saying.

"Our syndicate will pay off the damage claims due to Pegasus Lines and Lloyd's," Dalquist told her. "And pay Captain Kephart's salvage fees. In addition, we will invest two million francs for new equipment. In return you will deliver 40% of the Jefferson Corporation stock to us."

He wasn't being generous. With a 40% bloc it was a cinch they could find enough more among the rock-rats for a majority. Some of them hated everything Rhoda stood for.

"You've got to be crazy," Rhoda said. "Sell out to a goddam syndicate of corporations? We don't want *any* of you here!"

Dalquist's face was grim. "I am trying to remain polite, and it is not easy, Ms. Hendrix. You don't seem to appreciate your position. The corporation representatives have made their decision, and the Commission has ratified it. You will either sell or face something worse."

"I don't recognize any commissions," Rhoda said. "We've always been independent, we're not part of your goddam fascist commission. Christ almighty, you've found us guilty before we even knew there'd be a trial! We weren't even heard!"

"Why should you be? As you say, you're independent. Or have been up to now."

"We'll fight, Dalquist. Those company cops will never get here alive. Even if they do—"

"Oh, come now." Dalquist made an impatient gesture. "Do you really believe we'd take the trouble of sending Intertel police, now that you're warned? Hardly. We'll merely seize all your cargo in the pipeline and see that no ship comes here for any reason. How long will it be before your own people throw you out and come to terms with us?"

That hit her hard. Her eyes narrowed as she thought about it. "I can see you don't live to enjoy what you've done—"

"Nonsense."

I figured it was my turn. "Rhoda, you may not believe this, but I heard him argue them out of send-

ing the cops without any warning at all. They were ready to do it."

The shouts came from the bar as Jed opened the door to see if we wanted anything. "THERE'S GONNA BE A GREAT DAY!"

"Everything all right here?" Jed asked.

"NO!" Rhoda shoved herself away from the table and glared at Dalquist. "Not all right at all! Jed, he's—"

"I know what he's saying, Rhoda," Jed told her. "Cap'n Rollo and I had a long talk with him last night."

"With the result that I'm speaking to you at all," Dalquist said. "Frankly, I'd rather see you dead." His face was a bitter mask of hatred, and the emotionless expression fell away. He hated Rhoda. "You've killed the best friend I ever had, and I find that I need you anyway. Captain Anderson has convinced me that it will be difficult to govern here without you, which is why you'll remain nominally in control after this sale is made."

"No. No sale."

"There will be. Who'll buy from you? Who'll sell to you? This was a unanimous decision. You're not independent, no matter how often you say you are. There's no place for your kind of nationalism out here."

"You bastards. The big boys. You think you can do anything you like to us."

Dalquist recovered his calm as quickly as he'd lost it. I think it

was the tone Rhoda used; he didn't want to sound like her. I couldn't tell if I hated him or not.

"We can do whatever we can agree to do," Dalquist said. "You seem to think the Corporations Commission is some kind of government. It isn't. It's just a means for settling disputes. We've found it more profitable to have rules than to have fights. But we're not without power, and everyone's agreed that you can't be let off after trying what you did."

"So we pay for it," Jed said.

Dalquist shrugged. "There's no government out here. Are you ready to bring Rhoda to trial? Along with all the others involved?"

Jed shook his head. "I doubt that it—"

"And there's the matter of restitution, which you can't make anyway. And you're bankrupt, since you sent no cargo to Luna and the window's closed."

"Just who the hell is this syndicate?" Rhoda demanded.

Dalquist's expression didn't change, but there was a note of triumph in his voice. He'd won, and he knew it. "The major sums are put up by Hansen Enterprises."

"And you'll be here as their rep."

He nodded. "Certainly. I've been with Hansen most of my life, Ms. Hendrix. The company trusts me to look out for its best interests. As I trusted Joe Colella. Until he retired he was my best field agent."

She didn't say anything, but her face was sour.

"You might have got away with this if you hadn't killed Joe," Dalquist said. "But retired or not, he was a Hansen man. As I'm sure you found when he discovered your plan. We take care of our people, Ms. Hendrix. Hansen is a good company."

"For company men." Jed's voice

was flat. He looked around the small back room with its bare rock walls, but I think he was seeing through those walls, out through the corridors, beyond to the caves where the rockrats tried to make homes. "A good outfit for company men. But it won't be the same, for us."

Outside they were still singing about the great days coming. ★

GALAXY STARS

★ ★ ★ J.E. POURNELLE ★ ★ ★

You know about Athletics Anonymous? You get the urge to exercise, you call one of the numbers on their list. Someone comes over and drinks with you until the urge goes away.

I've been thinking of getting Jerry a subscription.

In the four years since we met, Jerry has made of me a sailor and a skindiver and a backpacker. I now own a Silver Knapsack patch and half of a boat (*Ariadne*, built by Jerry and a friend I intend to meet some day). It's not that I've given up laziness as a way of life. But every so often Jerry points at my belly and giggles hysterically, and off we go into the wild with half a dozen Boy Scouts, or over to Catalina with Barry Workman as crew. (Two Captains, one Crew. Oh, well.)

Meanwhile, we spent three years writing a novel. Then six months writing a second. A collaboration takes practice. We've got a third novel half written and two more planned.

The Pournelles and the Heinleins are good friends. It fits, because Jerry fits Robert Heinlein's image of the omnicompetent man. He holds Ph.D.s in Psychology and Political Science, a Master's in Experimental Statistics, Bachelor degrees in History and Engineering. He was in the aerospace industry, in space medicine, for a full decade, including two years as Chief of the Experimental Stress Program, Human Factors Laboratories, Boeing Company. He fought in Korea as a Lieutenant. He taught in college. He has managed political campaigns for Mayor Yorty, and was Executive Assistant to the Mayor in 1969.

He's married to a lady as tough and as full of drive as himself. Roberta Pournelle teaches in a girls' jail. They've been married for sixteen years; the family includes four boys and a dog.

A disillusioned ex-Communist, Jerry now stands somewhere to the right of Gengis Khan. "I like to think of myself as a twelfth century liberal," he says.

It's hardly surprising that he prefers hard science fiction. He speaks rudely of stories in which the background is sloppy or badly researched. He is as critical of bad sociology, politics, and history as he is of bad physics. He finds even the sociology of my own future history unbelievable. Fuel considerations make my Belt civilization too inefficient to survive, he says; the Belt government would be on Earth.

Four years ago, over lots of brandy and coffee, we explored the possibility of collaborating on a novel. At the time Jerry had written some short science fiction and two espionage novels. He still pours brandy in his coffee; I taught him that. Another result was that he made me an offer I couldn't refuse.

No, he left his knife in his pocket. He offered to give me full veto over any disagreement on the proposed novel, and to do the final rewrite from scratch. That was something I insisted on: one of us had to rewrite from the beginning, to smooth out any differences in our styles.

He didn't know he'd be typing out a 230,000-word novel. He complained bitterly, but he did it. Later we had to cut out 60,000 words. . .

It turns out that Jerry's skills match the holes in mine, and vice versa, indecently well. Jerry can handle politics and military matters; I try to steer clear of them. I prefer two or three or four people in a room; Jerry can handle a full session of Congress. But my imagery is more vivid, and there were no aliens at all in his thousand-year-old interstellar Empire until I dropped the Moties right in the middle of it.

We've been teaching each other, these past four years. I wrote some of the conference scenes in *A MOTE IN GOD'S EYE*. Jerry carved out the Motie social system and carved out the Keeper subgroup. We criticize each other's stories, to our mutual benefit.

We are both competitive types. At the beginning I expect we each wondered if the other would hold up his end of the collaboration. Jerry says he stopped wondering about me one rainy night when, during a brandy-and-coffee session on *MOTE*, we found that the snails were all the Hell over my garden. We went on a snail hunt. We must have killed nearly two hundred of the tiny marauders. And Jerry laughed hysterically at my determination to get more snails than him.

No way will either of us fail to put all he's got into a story. No way will we write the same story twice. Our five novels, written and merely outlined, include a tale of alien contact and interstellar war and politics, a trip through Dante's Hell, a study of social changes in an arcology, a disaster-and-survival novel, and the first serious treatment of alien invasion since *THE WAR OF THE WORLDS*.

It's rather wonderful, how our advances keep going up.

—Larry Niven

THE THINKER OF

TRYLLMYNREIN



*Given the wrong axioms,
the best logic is
worse than useless!*

JON DES CLES

AUTUMN in Tryllmynrein. Josep Pachryntz stood in his darkened room, looking out over the city he loved. He wondered when the lovely rain would end. It was the sort of rain he liked best, the kind that is too hard to be a drizzle and too soft to chase people back indoors. The rain that infuriates because it soaks without pelting. The soft shower that makes it easy to hate the reason you are out in it.

They would be out in it now, perhaps, the people of Tryllmynrein, thronging in some small ornamental square, rallying against the oppression of the Thinkers. It made Josep proud to think that the protest was his doing. For without that hatred, without that constant danger, men would seek the abso-

lute power of the Thinkers, and civilization would collapse. Power is a valuable thing, and the men who wield it must be made to pay for it. Else they become corrupt.

That was why Josep Pachryntz, as the Leader of the Opposition, was the most beloved man in the city; it was his job to stir the hatred of the people against the might of the Thinkers.

Josep let his eyes wander to the other side of the city. Four pillars of crimson light proclaimed the location of the Palace of Thought. Four identical pillars of golden light, one at each side of the tower in which he lived, proclaiming the residence of the Opposition. His eyes sank softly over the covered glow of Tryllmynrein and came to rest at the center, on the swirling pastels of the Great Top. It spun and shifted, spinning wishes to all those who wanted to balance themselves and their fortunes against the universe of chance.

The door chimes sounded. Josep checked the security panel and opened the door. A tall, thin man stood outside. He had black hair and his face looked as hard as iron.

"Josep Pachryntz?" the man asked.

"Yes." Pachryntz's heart stirred strangely as he saw the almost legendary black coveralls of the Guardians. It had been rumoured that the Thinkers had finally eliminated the Guardians, for they were never seen.

"I'm Gordon. You ordered a riot outside the Palace of Thought?"

"I did," said Josep. There was something odd about the strict formality of Gordon's speech. He let his hand slide along the door jamb to the button that would summon help.

"Stanmetton is dead," said Gordon. "The rioters got him. They sent you this token of their appreciation for your work." Gordon reached into his purse and took out a small package.

Josep did not take the package. A picture of Stanmetton ran through his mind, the Thinker of Tryllmynrein itself. A small, balding man with an ingratiating air who had tried all of the thirty years of his office to please the people. It would be a loss. But that was the price one paid for being a Thinker. For power. Power that must never be allowed to become too attractive.

"All right, then," said Gordon. He unwrapped the package, held out its contents for Josep to see.

Josep reeled against the door, stomach churning. It was a part of a man. "Who sent this?" he gasped after a moment.

"It doesn't matter," said Gordon. "But I'll tell you. It was Carteling, your deputy. He seemed to think you'd be amused at having a souvenir."

"It's disgusting," said Josep sharply. "I'll have him demoted. I'll throw him out!"

"You won't have the chance."

said Gordon. "When Stanmetton was butchered, the Great Top chose a new Thinker for Tryllmynrein. I'm here to see that you are safely conducted to the Palace of Thought. Before Carteling and the mob get here."

Josep Pachryntz shivered slightly. The Universe seemed to be just two steps away, but if he took those two steps he would have to come to terms with that statement. That statement that had to be a lie. Deep inside him he knew that *it had to be a lie*.

"There's a button here, by my hand," said Josep. If I push it there will be a hundred of the Opposition in here in a matter of minutes. Take your damned joke and get out of here and I won't push it."

"Guardians have a certain duty," said Gordon. "Go on and push the button if you want. Then we'll both die here. It won't matter to me."

Josep slammed the door in Gordon's face and ran to the tank. He pushed the button and watched the letters of the news broadcast float before him.

MARS REJOINS FEDERATION///BATTLE ON OUTER CONFLUENCE OF CAGAR CANAL ///ODD REVERSAL OF ROLES: STANMETTON KILLED, PACHRYNTZ ELECTED///HUNT ON FOR TRAITOR PACHRYNTZ///

Josep smashed the button with his fist and went back to the door. Gordon was still there, still iron-hard, waiting. Josep's head swam

as he stepped through the portal. Gordon took one step forward and had him against the wall with a single swift motion.

Josep struggled, but his breath was cut off by an arm against his throat. He watched, weakly gasping for breath as Gordon brought the small, glowing iron to his cheek. The smell of his own burned flesh crept up his nostrils as he tried to cry out at the pain.

Then it was over and the anesthetic took effect. He was branded with the sign of the Thinkers; now there could never be any escape.

"Come on," said Gordon, releasing him. "We have to hurry. If we don't get to the Palace before sunrise they'll find you."

THE MUSIC and the lights went out and the lift stopped. They were in a little bubble of darkness, and fear was trying to get in.

"Carteling is here," said Gordon.

A moment passed and then the ceiling of the lift glowed cherry red and started to melt. Drops of molten metal fell to the floor and Josep flattened himself against the wall. Soon there was a hole in the ceiling big enough for a man to pass through.

Gordon leaped up, grabbed the glowing edges of the hole and pulled himself through.

"Come on," he called softly.

Then Josep, too, leaped up, his nerves shrinking from the contact of

the hot metal. But Gordon had him before his hands could make contact, and he was hefted through with only a small burn on his left shoulder. Gordon's hands were softly wet and bloody where they were not charred.

A tiny beam of light appeared from Gordon's hand and searched the wall of the shaft. "Ah," he said, and pushed a button concealed in the safety-catch mechanism. The car beneath them started to rise.

"Does that restore power to the building?" Josep asked.

"No," said Gordon. "Only to the lift cables. Has your organization discovered the escape-mechanism at the top of each building?"

"Not that I know of," said Josep.

Gordon shone the light upward and picked out the huge machinery of the lift. There were great wheels and cogs, around which the cables passed. As they came closer a section of one wheel slid out revealing a door. Gordon led the way through it, then shut it behind them to baffle pursuit.

"It won't open unless they use the emergency button," he said. "They'll think the car was at the top to begin with. I don't think anyone knew about your being home, did they?"

"They could have guessed," said Josep.

"Then they will guess that they were wrong when they see that you aren't there."

"They'll find that . . . object . . . that you dropped in the hall," said Josep.

"True. But that could be a good reason for you to go out. They don't know that I delivered it. And they won't find the man who was supposed to."

They emerged on a tiny balcony. The tower of the Opposition was covered with such balconies, many of them ornamental. It was dark, and Pachryntz's erstwhile ally, the rain, was now his cold enemy, through which Tryllmynrein was a grey glow far beneath them.

"Will we be safe here?" asked Josep.

"Where there is no one to kill you, you are safe," said Gordon. "By definition."

"What now?" Josep asked.

"Take this," said Gordon. It was a tube, about three inches long, painted black to make it inconspicuous. Josep recognized it as a nelfer beam.

"Haven't you anything else I could use?"

"That's the weapon officially prescribed for Thinkers," said Gordon. "If it's used properly it can do anything from putting the victim to sleep to killing. Most of the Thinkers are too busy to learn to use it properly, so it usually maims or paralyzes. You can't really blame them for not caring. The people they use it on are generally out to kill them."

The wind blew harshly at this

height. In a matter of seconds Josep's silks were soaked through. As the mists were whipped away he could see the reflected lights on the pools and basins of the city far below. Then the rain shrouded them again.

He wondered what Tryllmynrein would look like if it were open to the sky instead of all illumination being masked. This greatest of cities would scintillate like a gigantic diamond. But then, the glory of the Palace and the Opposition would be dimmed, and the Great Top would be hard to find out there at the center.

"Now!" said Gordon. He leaped over the edge of the balcony. Josep followed without thinking, and found himself caught about the waist by Gordon's powerful arm. He got his balance and realized that he was sliding through the air on a downward trajectory toward the lower roof of another building.

"How does this work?" Josep asked.

"I don't know," said Gordon. "It's one of the things the Thinkers keep secret."

A moment later they landed on the wet and slippery roof of the building. Gordon held onto Josep and led the way across the wet tiles to a parapet. Cast metal grillwork decorated the side of the building, and without looking downward, Gordon climbed out and down the side. Josep followed, trying to block out his fear.

It took three hours.

They had to go sideways to avoid windows and balconies, and when they reached the mosaic pavement, Pachryntz's hands were bleeding, his arms ached with the unfamiliar exertions and his heart pounded in his chest as he leaned against the building to catch his breath.

"From now on, we run," said Gordon. The Guardian started off at a trot. Josep started to call out to him, but instead, followed.

In a nightmare they ran through the wonderland city of Tryllmyn-rein, casting eyes about fearfully at gaudy-colored gems set in golden walls and silken cloths. But rain had thinned the puffiness of fashion and the folk who walked the streets paid them no heed. How merciful, thought Josep, that the skies turned the overblown inhabitants to thin, soaked rats in gay rags, and made all unrecognizable.

Josep's mind was fuzzy when he fell subject to the insidious music. It was a shock for him to note how close it was. Ahead and very close the Great Top was spinning, and that, in itself, sent shivers through him. For the Great Top was a two-fold god-goddess. It was the answer and the question at once, and Josep was afraid of it.

Somewhere the Princess sat, watching and deciding. You came to the Great Top and made your wishes. Sometimes the Great Top answered them, and sometimes it

didn't. Sometimes the Princess intervened. But for each wish granted, someone had to pay. The balance had to be maintained. If someone was given joy, someone else had to be damned. There were rules to be kept, and over all there was the Princess.

You couldn't know how close you had to be to the Great Top for your wish to be recorded in the Cosmic Bowl, because the effective radius was always changing. You had to have faith. And you had to be brave, to be willing to take a fifty-fifty chance. Heaven or Hell. Those who dared stood in the circle at the base of the Great Top, next to the brass rail that guarded the point on which it whirled.

Josep had never risked a wish on the Great Top. He didn't want to. He was afraid of that black fifty percent.

Ask the Opposition for Miracles! the Thinkers said.

The music swelled, and Gordon led him around a corner and into the circle of the Great Top. Josep drew back, pressed himself against the wall inlaid with ivory figures. The Opposition had never dealt in miracles, but it could guarantee the right to *hate*, and that with nothing in return. There were no chances to be taken with the Opposition.

An Opposition ground-car shot out of a street on the other side of the circle, and went into orbit around the base of the Great Top. Josep Pachryntz froze against the

wall and stared up at the Great Top.

It was huge and beautiful, spinning on its tiny point, leaning first to one side, then to the other, as if at any moment it would topple, and crush the devout, bounce from one side of the circle to the other in a musical death rite. It was gold and pink and purple, and then the colours became soft, pastel, lavenders and orchids. The whole thing turned the color of the best persimmons, warm, with a frosty purple overlaying it.

Josep Pachryntz's face appeared on the side of the Great Top, projected from the ground car. It muddied the colors. The rasping voice of Carteling blared out and destroyed the calm spell of the music.

It was a good trick, thought Pachryntz with professional pride. One he had invented himself. Interrupt the faithful at their wishing and they will do anything to get rid of you. Even run the risk of an unprofitable wish that might doom them if it came out wrong.

Of course, the Princess would probably intervene if anyone wished another dead. But if enough people wished Josep Pachryntz caught so that they could get back to their own wishes, then the odds were that Pachryntz would be caught.

Suddenly Pachryntz remembered old Murphy, who was hanged by the thumbs over a fire the day he was elected. This was the technique he'd used on Murphy. And Murphy hadn't wanted to be elected either.

It didn't matter at all, he thought, whether you wanted it or not. No one did. If the Opposition got its hands on you. . . . And as Leader of the Opposition, this unwilling act of treason would make him the most hated Thinker in. . . .

Pachryntz stopped short in his musing. He was a *Thinker* now, not the Leader of the Opposition. His loyalties must now be to the Thinkers. If they were not, then the balance between the Thinkers and the Opposition would be upset, and civilization in danger. He was the enemy now. The men in the Opposition car out there in the circle were after *him*.

Gordon grabbed at his shoulder and tried to pull him back into the alley. But it was too late. A woman stood screaming and pointing at him, and the crowd was surging toward him. The car stopped and shot a spot-light at him. Josep Pachryntz wished the earth would open and swallow him.

It did.

A JAGGED SWORD of light jerked into being and swiveled around them. In the cool, damp darkness that followed Josep heard himself speak.

"I wished the earth would swallow me up," he said.

"From the looks of this place, it did," Gordon replied a moment later.

They were in a tunnel with walls of unfinished concrete. As Gordon

led the way around a bend, they were faced with the dim glow of a fluorescent panel inset with innumerable dials and switches. Several massive pillars rose from the floor to the ceiling close above their heads.

"We came straight down," said Gordon. "This is the chamber beneath the Great Top. There is a tunnel around here somewhere leading us to the Palace." He walked to one side of the room, then the other. Finally he found the door he was seeking.

"I didn't know there were tunnels under the city," said Pachryntz.

"You aren't supposed to. But we'll decide what to do about your forbidden knowledge after we get you to the Palace."

They walked on in silence. The tunnel split several times. Josep realized that Gordon was following a trail of foot-prints in the dust of the floor.

"These tunnels have been sealed for centuries," said Gordon. "Neither the Thinkers nor the Opposition is supposed to know about them. Even if Carteling hadn't already been in the building, I wouldn't have brought you through the tunnels. Only the Guardians know about them, and we don't use them very often. Only when we must, such as during the construction and assembly of the Great Top."

"Just what is the function of the

Guardians?" asked Pachryntz.

"To maintain the status quo. The safety of civilization is our charge."

"When are we expected at the Palace?"

"We aren't expected at all. Not many get through these days. The Opposition has become most efficient. If it maintains that efficiency, it won't be too long before the only effective people left are the Opposition. Then the Great Top will elect *them* as Thinkers. The brains will once again belong to the Thinkers, and civilization will go on."

"What about you?" said Josep. "Doesn't the Great Top ever elect a Guardian?"

"It can't," said Gordon. "We are dead."

"What do you mean?"

"Quite simple," said Gordon. "Thinkers require a degree of volition, independence, if you will, to make decisions. But we Guardians don't need that. We are taken at birth and . . . corrupted. As men. Things are built into us. We can do only that which furthers our society. We have no will. We are as good as dead. The dead are not elected."

The footprints went up a thin metal stair at the side of the tunnel. Gordon went up and opened the door. It was dark, and Pachryntz felt apprehensive as he followed. He heard Gordon cross the room, and then the lights went on.

They were in the midst of a party. People stood all about with glasses upraised and laughter on their

faces. But there was no sound, no movement. And the people were covered with dust. There was a faint, unpleasant smell in the room.

"They're all dead," said Josep.

"Yes," said Gordon. He moved through the gathering toward a door on the other side of the room. "For some time now."

Josep followed him. The party had spread into the next room. All the guests had been caught in mid-motion, frozen. Gordon pushed past a woman in a rotting white gown. She fell to the floor and shattered. A foul smelling cloud of dust arose to choke him.

There were three more such rooms, and then they came out into a clean, well-lighted corridor. Gordon shut the door of the last room behind them and they both took a breath of the sweet air.

"Who are they?" asked Josep.

"The dead. Does it matter?"

"Yes."

"They were," Gordon said, "the technicians who assembled the Great Top. When they were finished they had a party. While it was in progress, the rooms were filled with gas and they died quickly and painlessly."

"Why?" said Pachryntz.

"Who knows?" answered Gordon. He shrugged his shoulders and started off down the corridor.

"Who killed them?" asked Pachryntz.

"The Guardians, under orders from the Thinkers. It could have

been for any of a million reasons. The ultimate reason is balance, as it is for all things. Someone must live, someone must die."

"The Thinkers should be able to find a better way of maintaining the balance," said Josep.

"They should," agreed Gordon, "but they don't."

"Elaborate."

"The Thinkers, too, are corrupted. But only after their election, not from birth. That is something we take care of when we first bring you here. New thoughts, as you should have guessed, are dangerous. They are likely to endanger the power of the Thinkers if they are in the wrong hands. And they must be in the wrong hands, because the Thinkers cannot have new thoughts."

"Why not?" asked Josep.

"Because if they were capable of new thoughts it would give them more power, and that would make for an imbalance between the Thinkers and the Opposition. The struggle for power would mount in an upward circle until one side overthrew the other. That is the function of the Guardians. To maintain the balance. So we perform a simple operation on the Thinkers, to prevent them from doing anything original."

"But the Opposition can have new thoughts!" said Josep.

"True. But, a few new ideas cannot prevail against the accumulated learning of the race. And we make sure that the Opposition has

no time to invent miracles, is kept too busy hating."

"But if the Thinkers can't do anything new, where do the miracles come from? Where did the Great Top come from?"

Gordon walked faster, getting a few paces ahead of Pachryntz.

"From these rooms, here, under the city," he said, without turning back to Josep. "From this warehouse. This museum. When they want something new to amuse or pacify the people, they delve into the ancient records and find a new toy. A toy invented tens of thousands of years ago, perhaps before we came to this world. Before the establishment of the status quo. Before we were corrupted and in turn corrupted the brains of the Thinkers."

"Before. . ." said Pachryntz. "Before. . ." Josep's mind whirled. There was a time in his childhood when he had asked questions. Questions about. . .about . . .what? About how things were before he was in the world. He'd been told not to ask such questions, and eventually he had stopped. For how many generations had this gone on?

"It is all arranged," said Gordon. A pattern in which we are corrupted so that we will perform certain functions without being able to stop ourselves. And there is nothing we can ever do to break the pattern, save by the wildest chance. A chance that is as improbable as the

results of a wish on the Great Top."

Pachryntz thought: That is only a fifty-fifty proposition. Why. . . ? And then he knew.

"We'll have to walk around that green line," said Gordon. They were passing an open door. A green line was painted in a semi-circle before the door. The room itself was dark and dusty. "That is the room of the Princess," Gordon continued. "Guardians cannot go into it. So it isn't kept clean."

Pachryntz stopped.

"Keep walking," said Gordon. "I can summon a regiment of Guardians here in a minute. You can't escape now. You might as well come along." His voice got slower and slower. He started to turn.

Josep Pachryntz lifted the small black tube in his hand and aimed it at Gordon's head. He fired.

Gordon fell, but shrieked a warning as he did so. Shouts echoed down the hall.

Josep turned and ran into the darkness of the Princess's Room. His footsteps sent back tinny echoes that testified to the sheer size of the place. He held one hand before him and walked farther into the blackness. After a while he slowed and listened. He turned and looked back at the door. It was far away and small.

"Thank you!" The words came from somewhere out there in the dark.

Josep pressed closer to the metal of the . . . whatever it was. There were all manner of things in the darkness. Huge metal things of undeterminable function, but that were warm to the touch. He had sat on the floor by this one for a long time.

"Thank you!" the words came again, the only sound that had disturbed the deep silence of the place. The voice was weak. Gordon was out there somewhere, looking for him.

"I haven't got long," Gordon called. "I don't blame you if you don't trust me. But listen. You haven't anything to lose by listening."

Josep let his breath out slowly, silently.

"Do you know about emptiness, Josep Pachryntz?" said Gordon. There was pain in the voice. "You would, if they'd got you to the room with the scalpels and probes. They do something to you there. They seal you off in a little corner of your brain, while the rest of it does their bidding, lives by their rules, thinks their thoughts.

"Listen, Josep. They gave me something to kill the pain. They wanted information; I told them I'd bring you back. And before they could stop to think that a Guardian shouldn't be able to enter this room, I had walked across the line.

You see, you burned away the blocks they had built in my brain. I can talk now, for the first time in

my life. I can put my thoughts into words. You don't know what that means, Josep, but if you ever leave this room, you will.

"I don't know what's in here, Josep. I took a chance that it might be something really important. If the Guardians are kept out, it must be. But the Thinkers can come in, if they want to. You've got to hurry if you're going to do anything." The wounded Guardian paused, and seemed to laugh.

"Do something, Josep. Anything. It doesn't matter what. But the stronger it is, the better." There was a pain-wracked silence, and then Gordon continued. "Know what I'd do if I had the chance? I'd make a wish. I'd wish the whole thing were ended. Not just my life—everything. . . .

"Anyway, I wanted to thank you, Josep. I wanted to. . . . thank you. Because just talking into the darkness like this, not knowing whether or not you even hear, is all that my life has ever been worth. All that has ever mattered. The rest is. . . less than nothing.

"I hope you can hear me. But don't take pity and shoot me again—they will see the beam and get you. Stay free. Do something. Avenge us, Josep. Avenge us all!"

Pachryntz didn't know whether to trust Gordon or not. But then his doubts were removed; a tiny spark shot across the room from the distant portal. It touched the floor before Gordon and exploded. In the

light Pachryntz saw the wounded man sink to his knees and heard him call out: "Gas. . . run. . ." Then Gordon fell and did not move again.

By the dying light of the gas bomb Josep had also seen a door about sixty feet away. He ran toward it. A second bomb exploded behind him, and he corrected his course. A third bomb went off, and his hand was on the knob. He tugged against the ancient hinges and the door slowly opened. Without looking he plunged into the green glare that spilled forth.

JOSEP STOOD for long seconds, his back against the door, his heart pounding, and looked down the length of the chamber. The room he had just vacated was but an antechamber to this one. Two long rows of monstrous metal cubes made an aisle at least half a mile in length. The cubes were covered with meters and dials that glowed feebly in the lambent atmosphere. The green light came from a huge screen at the opposite end of the aisle that flickered and swirled and beckoned. Josep walked dazedly toward it.

As he approached he noticed a chair that was virtually a throne facing the base of the screen; a small black dot centered at the bottom of a three-hundred-foot-high picture. For all its massiveness, the chair reminded him by comparison of a fly-speck.

The screen came into focus as he approached, and he saw images move fleetingly across it. When he had nearly reached the chair he saw it was occupied. He moved slowly around to the front.

The Princess sat there, waiting.

Her face was wrinkled and sallow, but it was obvious that she had once been beautiful. Her face bore a look of fulfillment, a sweet, sad contentment that kept her from being ghastly, even in death.

Josep wondered who she was, and what she had done. Was she from a time before the stagnation of civilization, or was she merely a Thinker who had found something in life? He wished he had known her.

In front of her was a console with keys. Each key had two positions, and all the keys flickered constantly. Josep looked from the console to the screen and back again. This was how the Princess intervened in the granting of wishes. But. . . it had been a long time since the Princess had made any judgements.

Josep reached down and punched a button. On the screen a single picture came into focus. He watched a little boy leap up in delight as a toy cart appeared out of nowhere before him.

The key flicked away from under his finger and another picture appeared. A woman turned and rushed away as a man whispered into her ear.

The balance was maintained. The

boy got his cart, and the woman lost. . .what? Josep really didn't care. She had gambled, and lost. Joy and sorrow were, after all, so intimately tied together. . .for every emotion an equal and opposite emotion.

Josep looked from the console to the screen, and then to the dead Princess. She had died here, playing this game, with all the world for her toys.

Suddenly Josep Pachryntz caught a glimpse of a pattern, but before it was fully in his grasp, he lost it. An insight, something that made him shudder, a confusion, and then it had escaped him, leaving only a sick hunger, an emptiness.

There was a problem. Here, of all places there had to be a solution, even to a problem such as his. But how long could people wait? How long *had* they waited?

He felt as a physical weight the centuries in which the Thinkers, the Guardians, and the Opposition had played their game. Viciously he shook the throne and the Princess clattered suddenly to the floor, with a paper-dry sound of tearing flesh and bones and the susurruus of dry, rotting skirts. He seated himself before the screen and watched the myriad images flash by.

Carteling's face appeared, staring intently at something outside of Pachryntz's view.

Pachryntz stabbed his finger down on the dark side of the key. Carteling ceased to be a problem to

anybody. Josep cursed himself for his stupidity. For his anger. For the nature that left him prey to petty ideas and passions and hatreds. He didn't watch what happened to balance Carteling's destruction.

After many images that he ignored another face appeared on the screen, a face he knew. The image loomed larger, seemingly of its own volition, as if the wish this man was making were too strong to deny. It was Gordon, enveloped in deadly gases, but clinging to a life he despised, holding on, and wishing with the strength of the dying.

Had it really been only seconds since he had left Gordon for dead in the outer chamber? He watched the screen intently, waiting for something to appear.

Gordon's lips moved, and though there was no sound, Josep knew instinctively what the wish was. It was as if Gordon were projecting the single thought into his mind, so clearly did he mouth the words.

I wish Pachryntz to find the answer.

Josep reached out and pressed the white side of the key.

At first nothing happened, as the Great Top studied the problem with which it was presented. If there were a solution within the range of its capabilities, it would solve. But as the seconds, the minutes, passed, no solution appeared.

The machines in the throne room screamed wildly, tortured beyond endurance. All the other keys on the

board of the console tried to spring up to a neutral position, but Josep kept that one key firmly depressed with the strength of desperation. His entire being was focused to one purpose—to hold the key down.

Silence. The screen went black. Josep held the key down. Then, with a low moan, the greenish light returned. Now, one of the black keys was depressed, as well.

His eyes went to the screen, searching for the solution, for the answer to Gordon's wish.

IT WAS DAWN, and Tryllmynrein lay before him. A light haze threaded its way through the beautiful, shadowed streets. It was a quiet time; the people were still asleep. The many-balconied buildings with their lacquer and gold were set against a brilliant blue sky. Josep knew the sky was blue, and brilliant, despite the pervading green tinge in all the screen's images. He had lived all his life in Tryllmynrein, and the city lived in his heart, alive and full of color.

First the power went. The pillars of light that stood near the Palace of Thought, and the towers of the Opposition, dimmed and vanished. The city ground to a halt; because it was a city built and held together with various kinds of power. When the power was gone, it crumbled. Before his eyes, Tryllmynrein crumbled. And Josep knew that he was the cause. He was glad that he could not hear the screams of the

millions trapped in the falling buildings.

The last thing to go was the Great Top. It spun wildly and lost its equilibrium; its rim touched the ground and it crashed into the building with the carved ivory inlay and shattered.

The pictures on the screen flickered wildly. Josep saw the Guardians, long regiments of them, falling dead. He saw the Thinkers clutching their heads and tumbling off their high stools. He saw blood pouring from the mouths and noses of the officials of the Opposition. Then, as the machines around him roared, the screen went black for the last time and he was alone in the darkness.

He would never understand; he was sure of that. If all this had been equal to the solution, then he would never understand the problem. But it was enough to have provided that solution. He waited.

When the machines were completely dead, when there was not a sound but the beating of his own heart and the singing of his own nerves, he took out a pocket lighter and made a torch from a twisted piece of the Princess's clothing. By that dim, flickering light he found the answer, at least in allegory, lying on the console in front of him.

He stared at the small mirror in his hand for a long time before he went up to watch the sun set and help pull survivors from the ruins of Tryllmynrein. ★

HELIUM

ARSEN DARNAY

WHAT HAS GONE BEFORE

A THOUSAND YEARS after the last of a series of limited nuclear wars Americans have polarized into two groups—Structure-Folk, who live in huge constructions along the coasts (Union), and Tribesmen, who occupy Hinterland.

The urban structures reach three thousand meters into the sky and depend on the levitating effect of *gravitron*, a field-force generated in tower pits. Liquid Helium is needed to cool the gravitron reaction. In the absence of the gas, structure collapse is inevitable—Structure-Man's greatest dread.

The only economical source of Helium is in Texahoma, an area controlled by the Ecofreak tribe. Tribesmen have a powerful anti-technology ideology-verging-on-religion, and to them Union is the incarnation of evil, but they are

coerced into cooperation by Union's atomic power.

Union, however, must use this power sparingly lest it destroy the Helium extraction and distribution facilities. Moreover, Ecofreak demands high-ranking hostages who live in the most vulnerable tribal settlements, exposed to atomic attack along with the natives. The situation thus is one of precarious balance.

In the year 1056, MYCAL BONO arrives in Ricardo, capital of Union. Bono and his delegation have come to renegotiate Helium Deliveries—a “Helium Round.” But this time Bono has a hidden objective—to obtain some electronic parts that the Activists, a radical group within the Ecofreak tribe who have recently gained power, need to bring to fruition



their plan to throw off the structure-yoke once and for all.

Following a reception in one of Ricardo's five towers, RIVERA FRENCH, intelligence chief of the Bureau of Tribal Affairs, reports to RESTON PROCTOR, Union's Chief Negotiator and head of BTA. Both men are upset because Ecofreak's Activist faction is an unknown quantity. In the past BTA has always negotiated with Accommodationists. The men know nothing about Mycal Bono and not much more about JONNY TACK, Ecofreak's ruthless young leader.

Mention of Tack reminds Proctor of a troublesome episode involving REGINA UNSLER, only daughter of Bernard Unsler, Union's leader ("the Unifier"). During a stay in Ricardo, Tack and Regina fell in love, suggesting to the Unifier the

notion of a Grand Alliance between Union and Hinterland to be achieved by intermarriage—an idea that is abhorrent both to Proctor and to Jonny Tack's father, both hard-liners. The marriage didn't come off.

Aside from the fact that the Activists represent an unknown quantity, Proctor is also worried because he is fomenting a plot to overthrow the Unsler dynasty—a move that will require Ecofreak help. Also, BLOTTINGHAM, Unsler's closest aide, has been unusually interested in the negotiations. Proctor instructs French to meet with ANDROS BARNEY, Ecofreak's permanent ambassador in Ricardo, to learn more about the tribe's strategy before the talks begin a week later.

Barney is a hold-over Accom-

modationist who wants to see Jonny Tack fail politically. He tricks FRANCO DART, an old man in Bono's group, into revealing that Ecofreak has developed a new device that inhibits nuclear reactions. Part of the device is a switch made of silcoplast (a cheap synthetic) welded to copper. Only Union can do the welding, which requires special facilities. Over some years Ecofreak could develop the welding technology, but Jonny Tack is impatient and wants to get the sil-parts in a hurry. Later Barney tells Rivera French enough to put Union on its guard.

After delivering the news to Proctor at a late-night ball game, French is attacked on his way home by a group of "flames," members of an upper-class cult led by SIDNEY UNSLER, the Unifier's son and heir. French kills one of the flames during a chase and escapes. The episode brings home to French again that Sidney's power is growing as the Unifier's faculties slowly fail. Sidney and his flames delight especially in ambushing and killing members of BTA. Sidney resents Proctor's power and popularity.

The traditional Opening Ball is held in Top Level, Unsler's domain, the following evening. French is present with MIRI, his wife—an artist and a member of a women's cult called Madonna.

Regina Unsler, who has been watching developments both with practical interest and with nostalgic memories of her love affair with Tack, arrives at the ball with a plan to secure her own escape from Union. Her brother Sidney has oppressed her, and under the

tutelage of her spiritual advisor, SISTER SERENITA, she plans to escape to Hinterland. To do so she captivates Bono. Meanwhile she also snubs CLAFTO MEYER, a prominent flame and the man who, with others, attacked French the night before.

Bono has spent a painful week trying to adjust to the powerful gravitron vibrations in Ricardo (he belongs to the five percent of tribesmen who find adjustment difficult). During the week he has been plagued by a recurring memory of his youth, hunting the man-sized Harvey hare, a mutant rabbit whose escape mechanism is a cloying telepathic pulse of love. The hunter must overcome his affection to achieve a kill.

On the morning of the ball, Bono finally experienced release from pain. Now he is giddy and disoriented and promptly falls for Regina. When she invites him to her domain he willingly complies—only to find her much less yielding in the privacy of her roof-top garden. Before she can yield herself, she says, she must have a sign of Bono's true affection. She demands that Bono request her as the Helium hostage of 1056. Only after she has seen the news on Media that he has done so will she be his.

Back at the ball, Clafoto Meyer has recognized French from the night before. French and Miri flee from pursuing flames and manage to lose them, but only after another flame loses his life. They reach Top Level's parking lot where Miri hides in a jump tube (one-man transport) while French goes exploring. He discovers that the

streets are blocked by flames.

Proctor meanwhile, is overcome with rage while he impotently watches the flames pursue French and Miri from the ballroom. In an instant he conceives a plan of retaliation against Sidney's flames—"Operation Hairy Scary."

As negotiations begin the next morning, all parties are tense and exhausted. Proctor has spent the night organizing Hairy Scary. Bono has spent it in chaste conversation with Regina.

French and Miri escaped the flames thanks to Barney's intervention—he escorts them out of Top Level surrounded by tribal delegates and, since they are still followed, invites them into the embassy for the night. Franco Dart objects to the invitation; to him, as an old Activist, French is the enemy. To appease the old man, Barney puts up the couple in an unused wing of the embassy. Relieved at their escape, the two make love, but only after Miri has completed her meditation. French watches her and thinks he observes a glow about her head and shoulders, a consequence of her spiritual achievements as a member of the Madonna cult.

Next morning French slips out of the embassy by a back way, leaving Miri to be collected later, with reinforcements. The flames are still watching.

During the negotiations, Bono asks for Regina as the Helium hostage, shocking both sides. Dart, fearful of what Tack might do, walks out (the approved hostage demand is for Sidney Unsler). Proctor sees his plot threatened. The talks stop as Union demands time to

assess its position.

Later Proctor and French have a violent argument. In a last-ditch effort to save his plot, Proctor wants to offer the tribe delivery of the silcoplast components if they withdraw the hostage demand and deliver a so-called "Interdiction." French is sure the parts have military significance and are part of a series of shipments needed to develop a new technology. He harks back to 500 lasers shipped five years ago against his advice. But Proctor is adamant.

On the way out French learns that DARBY DICKENS, BTA's security chief, will organize Miri's rescue late that evening.

French's staff has guessed the significance of the silcoplast parts, but PROFESSOR FULBRIGHT, foremost expert on the subject, angrily rejects the thesis. French leaves to let them argue it out.

Later that afternoon Bono calls Regina. She is distraught, and wants him to come to her at once.

That morning Regina had received a call from Sidney (who is laid up with a broken ankle). He is angry because she snubbed Clafto Meyer the night before, despite his orders to take Clafoto as a lover (because Clafoto is Sidney's favorite). Clafoto, he tells her, will come that night to claim her. Flames are guarding her doors to prevent her escape.

While Bono is getting ready to leave, Dart bursts in with orders from Tack. Bono has been fired as chief of mission. Barney has been removed. Dart has assumed both positions. Bono is locked up.

Clafoto is having dinner to celebrate his upcoming possession

of Regina when word reaches him that Miri French has been expelled from the embassy, has been caught, and is being held in a night club. He suspects a ruse and decides to pick her up after dinner with a larger group of flames.

Later that evening French waits in BTA's stadium for the rescue team to form. Preparations for Hairy Scary are being made, involving a large wooden chopping block and an axe-wielding man dressed to look like an executioner. The operation strikes French as crazy—as does everything at this moment, even Proctor's plot, which depends on the creation of an artificial crisis through a Helium Interdiction which will start structure collapse. With the help of Media, Proctor hopes to take charge. French has no faith in the plot, but now he doesn't care. He has arranged for Miri's safety with DACHSHUND JONES, leader of a "bottoms" gang.

BTA's forces ambush and gas Clafto Meyer and his complement, and rescue Miri. French arrives at Ecofreak's embassy at the same time and learns that Miri has been expelled by the new ambassador, Dart. Berserk with rage and fear he speeds away from his group bent on some mission of his own.

Meanwhile Proctor learns that the sil-components can be produced in four days.

He then dictates a letter to Ecofreak in which he hints that he is prepared to ship the silcoplast parts if only they will withdraw the hostage demand.

In Texahoma the next morning Tack gets word of the letter. He prepares to move the Activist camp to the vicinity of Ricardo.

* * * *

A DOUBLE TRACK OF DESOLATION

BONO AWOKE TO Regina's low moaning. A bright ray of sun pierced in through a crack and illuminated the dark hayloft. Speckles of dust played in the light.

He stirred, rose up to his knees brushing dry hay from his leather tunic and beard. He felt a strong unease about the brightness of the light—it was late. Could they move in daylight? Could *she* move at all?

Regina lay next to him covered by two huge wire-bound bales of hay. He had placed them on top of her the night before as a substitute for the graviton pressure her body demanded. He couldn't well imagine that it helped much, but maybe the illusion did.

He leaned over her and saw that she slept despite a constant movement of her head and flow of pained expressions across her face. He watched her, touched by the face. Somehow it seemed so different and ordinary in this new setting, in the gloomy light of this simple, wooden barn. Just a girl. Dark shadows beneath her eyes hinted at the trauma she'd undergone. It pained him to see it.

Bono had not imagined his first night in Hinterland with her as it had turned out. The escape had come off smoothly. He'd knocked a hole into the drilla-glass wall of her garden roof, dressed in the parka and wearing the oxygen mask. She'd stood beside

him, also masked, resembling some kind of alien creature. Air rushed out through the ragged hole. He enlarged it, listening to the scream of a siren somewhere set off by his breaking of the structure seal. They passed out through the hole and then, sidejets blazing, put distance between themselves and the tower. Minutes later, dropping quickly through the darkness, Bono turned and took in Ricardo with a glance, a random pattern of light.

The unnatural exhilaration he felt, consequence of gravitron pressure-drop, should have told him that Regina would probably have an adverse reaction to the outside. But he didn't discover just how badly she had been hit until they were nearly down and Regina ripped off her mask, turned to him, and gasped in a peculiar way.

When they landed amid the loud abrasions of cricket legs, she stumbled from her tube and tried to vomit, but nothing came out. He held her by the waist as she heaved. Later yet, many kilometers to the west, well beyond the Staging Station, which he'd skirted to the north, after they had found this lonesome barn, Regina had been in a state of great delirium, had suffered from frightful visions, had mumbled incoherently about serenity, being buried, oracles, ecology, and much else. At last, while he'd sat next to her stroking her hair, she had dropped off to sleep.

Now he reached out and gently stroked her hair again, arranged in braids like that of a tribal maid. He was careful not to wake her. She was. . . just a girl. And in that realization, seeing her as she really was for the first time, without the distorting

structure setting, Bono knew that he loved her more than ever.

How ridiculous to say that she was the Whore, that her seed couldn't mingle with his. People were people. She came from the same pod he did—in some misty past. They were alike. *Prejudice*, he thought. *Stupidity*. For a moment he thought of Mycron Crestmore as a petty little man who'd fancied that God spoke through his petty little mouth.

He moved from her and rose gingerly, recalling hard beams overhead. He had bumped into them during the night, arriving in total darkness, glad to have found a barn unguarded by loudly barking dogs. This barn was far from houses and people. They might be able to leave unobserved despite the advanced hour. If not, perhaps they could stay here until she passed through Adjustment.

Bono went down the narrow ladder and out past rusty farm machinery to the small side door he had forced during the night. Outside the sun blazed high and bright. The barn sat in a valley whose rims were lined with pines. A dirt road snaked toward the barn. He hadn't seen that in the darkness. Instead they had descended into the valley from over there, from his left, across that meadow.

He glanced in that direction now, trying to establish the relative position of the barn, and he saw something that sent his heart into fierce throbbing. Across the meadow. . . !

The meadow was a mixture of silvery mutagrass and green fodder scrub. A tiny waterway crossed it diagonally marked by lush, reedy vegetation on its banks and small trees, probably wild apple, at random intervals. From the direction they had

come, extending in a straight line right up to the apron of reddish dirt around the barn, he saw twin tracks of discoloration in the meadow. The green scrub was brown; the mutagrass was curled and blue; at the spot where they had crossed the creek, the reedy bushes had collapsed and died.

He ran to the edge of the apron and a few steps into the grass. He bent down and fingered the vegetation. The grass had died. Each track was two meters wide, more or less. Bands of desolation. . . Desolation!

In a state of excitement, Bono ran across the valley, in the spoor left by the jump tubes. He wondered how far the track extended. At this point they had been two or three meters above the ground. Earlier they had been higher.

He ran, angry with himself. He should have guessed that, even without direct experience. She should have picked a course over rock, sand, dried-out stream beds. Or they should have travelled very high in the air.

He hoped that they'd been high enough for most of the night. He had kept the tubes ten meters in the air except in spots where they had crossed over forests. Had that been enough? Well, he would soon know.

From the top of the rise, standing between fragrant pines on slippery needle-covered forest floor, he looked down the way they'd come. As far as his eye could reach, he saw the twin tracks, considerably narrower out there where they had been higher up, but visible. His heart sank. From some spot outside Ricardo, their trail led here in twists and turns, broken here and there, thin now and again—but a track any pilot could easily follow from air ship or helicopter.

There was no time to lose.

He turned and ran toward the redish, gabled barn as fast as his legs could carry him.

Poor Regina, he thought. However she felt, she would have to get up now and move—on foot. High up in the air they would be seen and reported. Near the ground they would leave a track. Time was of the essence.

LASERS

THE OFFICIAL LEVI-LIMO dropped down from the airspace and settled in front of BTA.

Proctor gathered up his robes while the driver ran around to open the door. Then he climbed out and stood waiting for Gregory Kron. He had taken the Bureau's lawyer along on this unprecedented visit to the Ecofreak embassy. Kron was also DA for Compliance and had supplied the technical language for the secret subagreement.

Kron clambered out, his narrow face pinched and blue. Kron was allergic to artisun, hence his expression of perpetual gloom. Once in power, Proctor intended to give Kron a Top Level cubohome where he could expose himself to natural sun through a drilla-glass roof.

Together the men mounted the stairs and went inside.

In thirty years of official life, Proctor had never experienced anything like this. At ten o'clock, Ecofreak had called. They asked for an *immediate* meeting about the letter Proctor had sent earlier in the morning. Proctor had suggested that *he* come to the embassy this time—a gesture of good will. He had set out with mixed feelings. And now, forty minutes later,

the subagreement was signed, sealed, and delivered. Kron carried it in a narrow attache case. The Interdiction could start within the hour. The negotiations had gone neverackingly smoothly.

At the elevator Proctor turned to Kron. "The moment we register the Interdiction, I want to be told. And alert Justin Todd at once. His people must be ready and in place. We must keep this absolutely secret, as pre-arranged."

Kron nodded and went off. His offices were on the first floor.

Proctor entered the elevator and punched a button.

So French had been right after all. These men *were* Activists. Dart had well-established Activist credentials. His sudden rise to power clinched it. Dart had accepted Proctor's conditions without a murmur. He cared nothing about the hostage demand, so much had been transparently obvious. He wanted only silco-parts. He hadn't even questioned the demand for an Interdiction. He'd nodded his head impatiently, eager to put signatures on paper. Barney, Proctor reflected, would have understood the significance of that demand at once. He would have guessed that Proctor aimed for the supreme position. And once firmly in the saddle, he would be a very different force, very unlike Bernard Unsler. No more Accommodation then. But Barney had been absent. And so had Bono—reportedly suffering from a bout of malaria. Fat chance.

Proctor left the elevator and walked to his office. He knew that French had also been right about the oscillation control properties of the components. Which meant that they *had* to be made

inoperative in some way. And there was a problem.

Earlier in the morning, Proctor had had an embarrassing discussion with Clemmens. Clemmens had evidently expected French to return, had expected French to tell Proctor what Clemmens didn't want to tell him—namely that the BTA technical staff was incompetent to defeat the Eco-freak device without some high-powered help. When French had been conspicuously absent, Clemmens had come to Proctor.

Probing questions had revealed that Clemmens and Fulbright had had a huge spat the day before and that Fulbright was the only man even remotely qualified to do the job. If Proctor wanted parts that didn't work, he would have to negotiate a settlement between Clemmens and Fulbright. Always the negotiator.

He stopped before Mrs. Sedlig's desk. "Get me Carl Fulbright on the tel," he said and walked into his office.

Moments later Mrs. Sedlig buzzed. Proctor leaned forward to activate his tel. Fulbright's goateed face appeared on the screen.

"Carl," Proctor said. "Thank you for taking my call. I understand you are in the midst of a conference. I apologize."

Proctor always said this—everybody was always 'in conference.'

"I forgive you, Res. I suppose this is about the sil-components?"

"Your are perceptive."

Fulbright made a deprecatory grimace. "Well, what pipe-dreams has your staff related to you? Do they still think it's an oscillation control device?"

Proctor recalled Fulbright from his days in Defense and chose his words carefully. Fulbright was tiny, dried out, but he owned the world's greatest ego.

Proctor said: "The staff opinion is ludicrous, but I wanted to talk to you about this personally. I owe you that at least for your trouble. I'd also like to get your gut reaction to this. Not your technical judgement, Carl, your reaction as a citizen. Is it even remotely possible? My staff might be limited, but they have good hunches sometimes. If you were betting, giving odds, what would you say? What are the percentages?"

The tone had been right. Fulbright's face relaxed. His features softened. He thought about the question. Proctor recalled that Fulbright didn't like snap answers, liked to ponder. Proctor watched as one of Fulbright's hands appeared on the screen to caress the goatee.

"Well, Res, anything is possible, you know—speaking now not as a scientist with thirty years of polish in Vibration but as you suggest—as a citizen. But possible and probable are two different things. I don't think it's probable at all."

Proctor suppressed the urge to ask why. That would bring the wrong reaction. Instead he asked:

"What conditions would you stipulate—as a man of science now—that would make such a breakthrough probable?"

"Oh, I don't know," Fulbright said, thinking. He turned his head to one side and stared off into the distance. "I've been toying with this and that since my session with Clemmens on your staff. . .and it occurred to me that if you could concentrate

gravitron vibration like you can concentrate light. . .if you could straighten out that helical geometry. . ."

Fulbright looked back into the screen, raised his eyebrows, shrugged.

Proctor felt reassured both by Fulbright's answer and manner. No doubt Fulbright had rushed back to the drawing board, anxious to check out the situation. Proctor suspected that Fulbright had been staring at formulae on a blackboard when Proctor called.

He said: "If you were to test that theory, Carl, what would you do?"

Fulbright gave a dry little snort. "Why, first of all I'd get myself a bunch of lasers and—"

"Lasers?"

"Why, of course," Fulbright said. "No need to re-invent the wheel. Not that the laser is a suitable device, but I'd start there."

Proctor said: "Carl, five years ago Ecofreak requested five hundred lasers. We shipped them."

The little man stared out of the screen. "You don't say?"

"I do say," Proctor rumbled. "Carl, we need your help. Desperately. Could you, Clemmens, and I have lunch? The BTA executive dining room? Would you mind very much? We have some awfully tight deadlines to meet. The matter is extremely sensitive, and I don't want to discuss it over the tel. Could we meet? In half an hour? I'll send a limo for you."

Fulbright nodded. "This puts a very different complexion on the thing, Res. Yes, I'll be happy to join you. By the way, if your man Clemmens had told me about the lasers" He shook his head. "Until later, then."

The face disappeared.

Proctor leaned back in his chair. He recalled the long, acrimonious debate with French five years back. If French ever returned alive, Proctor would compliment him on his insight.

Not that French had much chance to receive that compliment, Proctor reflected. Belmonte had been told of French's exploit by Blottingham. French had gone off the deep end. His usefulness now lay entirely in the past. The laser insight had been one of his last signal achievements—disregarding the silco discovery, of course, which anybody might have guessed. Dart had been so obviously, so single-mindedly interested in them. . . .

THE AMBASSADOR

DART HAD CHOSEN Barney's prison personally. It was a windowless room in the very center of the embassy complex. Dart had assured himself from drawings that the room was not even *near* a service chasm. He had personally inspected the wall for soundness. Barney would not escape, like French had, like Bono had.

Bono's escape was *not* Dart's fault. The staff had blundered. They should have told him that French had left the embassy by a back door, as it were, instead of through the front, as Dart had assumed. Tack couldn't blame him for that. Not at all. In the wake of Bono's escape, Dart had acted vigorously. Men had been sent out to search the landscape beyond the Desolation. Others had been dispatched to comb the chasm itself on the assumption that Bono had fallen to his death—a good likelihood. After all he

was a five-percenter. The pressure in the chasm was great. And it was easy to slip and fall in the darkness, on eroded walks.

At the moment Dart hurried to have a look at Barney. He walked up the narrow stairs from the communications room where he had transmitted the good news to Jonny. If it wasn't for Barney's troubling, haunting presence, Dart would have thoroughly enjoyed Jonny's exuberant congratulations.

Twice in one day Jonny had praised him! First for the letter Union had sent, essentially caving in on the silcoplast demand, the second for the subagreement itself, delivered within hours of the letter. But Barney troubled him, took all the fun out of it.

Dart stopped at the top of the stairs and waited until Dulsol had caught up. The man had a heavy, round head seated on a thick neck connected to a massive trunk. His arms were long and meaty. His legs filled the leather tunic to bursting. Short-cropped hair was a fashion in his district, Dallforth, something of an Activist stronghold. His red coloration was probably a sign of choleric temper. For these and other reasons—especially the courtesy Dulsol had shown him before he became Ambassador—Dart had elevated the man from his lowly post as Maintenance Chief to that of Provisional First Secretary. Dart needed an enforcer who could make the rest of the embassy staff do his will.

Together they went down corridors, turning several times, until Dart stopped before a peep-hole in a door. Dulsol had personally drilled the hole and had placed the glass before Barney had been incarcerated.

Dart wiped his eyes and fitted it to the hole.

At first he couldn't see anything, but then his focus adjusted and he spied Barney on the floor. The man was writing, writing on the floor of the empty cubicle.

Dart's face wrinkled up in anger. Writing! *What* was Barney writing down? The hand moved rapidly over the scriptoplast. Now Barney looked up, thinking. Now he bent down again and scribbled on. How had Barney obtained the scripto, the stylus?

Dart knew, knew what Barney was writing. It was an account of that dinner in the House of Eighty-four Flavors. Barney composed a falsified report of that. Dart had certainly not betrayed the negotiating strategy. At most his tongue had stumbled over a phrase or two. But Barney would know how to exploit that, would try to disgrace Dart with Jonny—now! Now that Dart had made a name for himself at last.

Who had helped Barney? Who'd slipped him the scriptoplast? Dart turned to Dulsol. "Who has keys to this room?" Dulsol said: "It's an ordinary lock. Anybody could get in."

"Come along, Dulsol. Let's have a talk in my office."

He strode off, furious.

In his office—recently Barney's and still filled with his things—Dart glanced about with distaste at the giant Harvey pelt on the wall, the collection of mutant skulls hung on little wooden plaques, the holograms of Barney's ranch in the foothills of the Sierra Petra. He sat down in Barney's huge leather chair, motioned to Dulsol to find himself a seat among the numerous hassocks. He peered down at his wrinkled hands laid on the shiny sur-

face of the desk. He looked up.

"Dulsol," he said, "as you know, Tack is coming north. He should have his camp set up by morning at the latest. I shall have to report to him, of course. I intend to leave tonight. While I am gone, you will be in charge. So far you have shown yourself an able, solid, loyal fellow. Now you'll have a chance to show what you can do. I don't expect you'll have any trouble. Everything is under control.

But I am leaving you one sort of messy item. I mean Barney, of course. Just now I saw him writing. I don't know what he's been putting down, and I don't want to know. Probably some kind of seditious message. Barney is a traitor. I have discovered that he had dinner with Rivera French the other night. He conspires with Union. As Jonny Tack told me yesterday on the cable, 'Fran-co, old buddy, I don't understand why Barney doesn't have the decency to commit suicide.' Or words to that effect, Dulsol. 'The man would be better off dead,' he said. I certainly agree, although needless to say, we'll probably have to go through with a long and dreary trial and all that.

Of course, if he committed suicide, we'd be spared that little formality. I am worried about that, Dulsol. I'm also worried about his friend. If anybody can get into that room, somebody might try to let Barney escape. Under no circumstances must he escape, do you understand?"

"Do whatever you must. He must be prevented from communicating with Union. At all cost. *All* cost, Dulsol. Is that understood?"

Dulsol nodded again.

"Very well. I'll be watching you, of course. If you do a good job, Dulsol, I'll put in a word for you. My recommendation should count for something now that I've pulled off the coup of the century. Well, that's that. Leave me now, Dulsol. I have to prepare my report to Jonny Tack."

Dulsol rose and left. Dart came to his feet as soon as the door closed on Dulsol's hulking form. He walked over to the Harvey pelt, grabbed the fine fur, and jerked. The pelt tore a little as it came off. Systematically, Dart began to remove Barney's things from the wall. He tossed them into a heap in the center of the room. Then he walked to the pile and trampled on it, stamped on it with both feet, until the pictures, mutant skulls, and wooden plaques were nothing but a rubble of glass, fiber, and bone.

BLOTTINGHAM

BLOTTINGHAM SAT in a genuine leather armchair at one end of a small gymnasium where Sidney worked out every afternoon with Roman sword and round shield to get his excercise. The weapons hung from the wall in racks together with horse-tail helmets modified with screened masks in front. Blottingham had chosen this place for his interrogation because it was the least private of Sidney's rooms. He had no desire to trample about in the Fire's domain.

Circumstances had made Blottingham both the Unifier's and Sidney's agent. Sidney's disappearance and Meyer's withdrawal had left a vacuum in the flame leadership.

The ranks were decimated indeed. Proctor's ploy had been effective.

Take Clafto. The man wouldn't budge from his father's palace, refused all calls. Fear was an effective weapon—but it could be used by anyone with a will.

Blottingham had been interrogating Sidney's bodyguard, servants, and those flames who'd spent the evening with the Fire. Despite persistent probing, he had heard the same incredible story from all who had witnessed the event.

A single man in a gas mask and armed with a chemgun had penetrated Sidney's domain. Alone and unaided, he had laid low one and all with chemgun blasts. His weapon had been turned to the maximum setting, and all those exposed to the gas had had an involuntary nap lasting between eight and twelve hours, depending on their metabolic rates.

Yet another servant stepped in front of the leather chair. Blottingham knew that the man would add nothing new to the sorry tale. This one and no more. Blottingham intended to act.

Listening to these witnesses, he had formed a theory in his mind. Proctor had staged that little theater with the flames as a diversionary excercise to mask Sidney's abduction by one of his best agents—French.

The boldness of the act made Blottingham wary in the extreme. If Proctor had dared this much, something very big might be brewing. Any direct action against Proctor could backfire miserably. Blottingham thought he knew a way to put pressure on Proctor and yet refrain from any overt conflict with the man. He had to be careful. What if Proctor acted in the name of other family members? They were known to be unhappy with Sidney.

He turned to a close aide. "Car-

mody, fetch me a tel," he ordered. Then he nodded to the waiting servant.

"Where were you when all this happened?"

The man was a butler or valet or table server. He didn't have the proud soldierly bearing of the palace guard—nor was he humiliated by having been overcome. He worked his hands in front of his chest in some embarrassment.

"Yes, sir," he began. "I was in the orgy room with the Master and stood by his head pouring wine from a flagon into his cup."

The man stopped short.

"And? Go on, man."

"And then, sir, the door burst open and there was the man with a chemgun in his hand."

"What did he look like?"

Blottingham was bored by this. Servants were stupid. He recalled the long and weary interrogation in Regina's domain. All the servants there had sworn that a meteor had hit the tower, knocking a hole in Regina's garden roof. A meteor! The people were superstitious.

"I don't recall seeing much of him, sir," the butler said. "Being surprised, as you can guess. I slushed some wine on the Master's shoulder, and I was so troubled by that, wiping his shoulder with a napkin I always carry that—"

"Get to the point, man."

"Yes, sir. Then it got me."

"What got you?"

"The gas, I guess."

"The gas got you."

"I suppose, sir. The next thing I know, one of your gentlemen was poking me awake, and I was laying there in a pool of dried wine."

Blottingham wondered about that pool of dried wine and ran a hand over his short hair.

"All right, you may go. But you didn't see the man? You can't describe him?"

The servant shrugged. "Just a man, sir. I can't say as I saw much detail. He wore a grey jump suit with zippers in front and little zippers over the pockets. He wore a gas mask, but underneath his chin was visible. He had a cleft in his chin. And he was blond."

Blottingham nodded. He waved the servant away. That man had been French, no doubt about it. He turned to Carmody who held the tel ready. Blottingham took the device on his lap and punched out the numbers for the garrison command.

"Please give me Roger Belmonte again," he said into the screen. "This is Blottingham from Top Level."

The formula always worked. He always got his man. Belmonte appeared in the screen, black face impassive.

"Roger," Blottingham said, "sorry to bother you so soon again, but the Unifier has just given me some new instructions. Meet me in front of the BTA with . . . oh, two or three plain clothes detectives. The Old Man is very concerned about Proctor's safety in light of the abductions. Can you meet me in . . . twenty minutes, say? See you there."

He signed to Carmody and told the others to return to Top Level. Then he walked through Sidney's domain to the front entrance where he climbed into a waiting levi-limo and told the driver to take them to Old Top in Central Tower. After they were under way, Blottingham punched a button in his arm rest and a soundproof pane of

glass rose up to separate the two officials from the driver.

Blottingham explained his plan to Carmody, using his assistant as a sounding board. Under the guise of protecting him, Proctor would be confined to his cubohome. Blottingham intended to drop a strong hint that Proctor's release was contingent on the production of Sidney and Regina.

"That should work," he told Carmody, "unless, of course, Proctor is stronger than I think he is. Do you think there is something to the rumors? In light of what's happened yesterday?"

Carmody shook his head. "I just can't believe that. The family might be restless, but Harvanth is solidly in the old man's camp. We've got the army. Nothing can happen unless we lose the Army. If you want my guess, I think this had to do with French, not Proctor."

Blottingham brushed over his short red hair with a hand. Carmody was certain of the Army, but Blottingham wondered. Proctor and Harvanth would be a winning combination. Proctor was popular and Harvanth powerful. Harvanth had much to lose if Sidney took over; Sidney had visions of military conquest. Blottingham turned to Carmody.

"Should we tell the Old Man? I'd hate to do it really. He's been very unstable lately. God knows what he'd do."

Carmody agreed with a nod. "Why don't we wait and see how Proctor reacts first. There is no sense in alarming the O.M. If Proctor resists, however. . . .

"You're right," Blottingham said without conviction.

He knew in his guts that Unsler

should be told. But then, again, what if Harvanth and Proctor plotted together? In that event Blottingham could easily end up on the losing side. He decided it was best to keep the situation fluid, the options open, at least for a while.

The trip to Old Top took exactly twenty minutes, as Blottingham had guessed. Belmonte already waited before the glass-fronted BTA entrance flanked by detectives. For once Belmonte wore an ordinary blue robe rather than his ornate red uniform and feathered hat. Belmonte didn't want to be conspicuous.

They went in together. A BTA security guard acted unusually officious. He insisted on seeing everyone's identity card, even Belmonte's, although the garrison commander was a well-known figure in Ricardo. Next he asked the gentlemen to fill in these here logs. Then he laboriously prepared and issued visitor's passes to everyone. Only after all these preparations did he call Proctor's office on the tel to announce the guests. He had a long wait before Mrs. Sedlig came back on the screen and asked that the gentlemen come up. The guard then gave elaborate instructions on how to reach the Negotiator's office, although Blottingham knew the way. Finally the guard released them.

Halfway to the elevator, Blottingham took Belmonte by the sleeve, pulled him aside, and quickly explained the mission.

Belmonte was a thick-lipped black with a stony face. He didn't react to Blottingham's account about the Unifier's grave personal concern for Proctor's safety. He merely stared.

Blottingham stopped. "Can you handle that, Roger?" His tone be-

trayed a certain amount of exasperation.

Bellmonte nodded gravely.

In Proctor's outer office, Mrs. Sedlig asked the gentlemen to rest for a moment. The Negotiator was on the tel. He would see them the moment he was off.

Blottingham sat down, feeling unease, and gave Carmody an oblique glance, but Carmody was staring at artificial bushes in large planters half masking a row of flag poles in golden stands: tribal colors.

The patent tension in the room disturbed Blottingham. He glanced casually at the morose detectives, at Bellmonte's noncommittal face, at Mrs. Sedlig's busy preoccupation with some sheets of scripto she pushed through a renewer. Some days ago this woman had conveyed a message from Proctor. Jump down a shaft!

For the second or third time this day, Blottingham regretted that he had shouldered so much of the day-to-day burden of running Union since the Unifier's last (and not much publicized) heart attack.

In a rush to leave a record before death should claim him, Unsler had begun his memoirs during the recuperation period. That book had become his sole concern.

Power had never weighed heavily on Blottingham. He had enjoyed its excercise. In a pinch Unsler had signed papers or, more rarely, had made a telcall or two to back up his chief of staff's decisions. But now Blottingham sensed a yawning emptiness at his back. He wasn't sure at all that the government could pull together and defend itself against a strong attack.

Unsler had been protected too long

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from too many facts: Sidney's intense unpopularity, the cabinet's neglect of business, the insolence of officials like Proctor, the carping tone of Media. . . .

Blottingham was tempted to rise, leave, burst into Unsler's study, interrupt all those literary labors, and say: "Mr. Unifier, I've botched it all up. Sidney has been abducted. Regina has disappeared, might have been kidnapped. The family has turned against Sidney. They hate me because I really run things. Harvanth and Proctor are probably plotting a revolution. Help me."

No, no. It was inconceivable. Blottingham would have to tough this out. Another day or two at most. Besides, it was too late to leave.

Proctor's office door opened and out came three officials. One was balding, older; one had a blueish, pinched face; the third was black. Blottingham knew him from reports: Dickens, the security chief.

Behind them came Proctor. He sported an uncharacteristic, beaming smile. His short, thick arms were extended in greeting.

"Paul," he rumbled. "How very, very good to see you. Quite an honor, I must say." He turned to Belmonte. "Roger! Are you with Paul, here? Gentlemen, do come in, come in."

Proctor ushered the people into his office, pointed at couches, armchairs. He rubbed his hands in seeming pleasure, but his forced cordiality served only to deepen Blottingham's anxieties. Blottingham sat down and brushed his hand over the short hair on the top of his head. More than ever, he urged himself to be cautious.

Proctor sat down, pleased with himself. In the last half hour or so,

immediately when Belmonte's warning call had cut short the lunch with Clemmens and Fulbright (but not before they had reached an agreement), Proctor had made many rapid arrangements.

He had reached every member of the Group, had briefed them all about the arrangement with Ecofreak, had designated Kron as the intermediary should Top Level move against him. The Helium pumping rate had begun to drop at noon. The Interdiction would be complete by evening. In four days, give or take a few hours, the change in power would be all set up.

Now Proctor had only one worry. French. Blottingham had come to demand that Sidney and Regina be returned—wherever in hell French had them. If only French had kept his cool last night, and had not shot off on his own. . . .

"What can I do for you, Paul?"

Blottingham said: "Res, Sidney and Regina Unsler have been abducted." He stopped and took in Proctor's astonished expression. Did the man feign surprise? "Of course we are keeping it strictly under cover at the moment, but the Unifier has expressed grave concern for the safety of all prominent men in Union. Especially you. You are more popular than most. He has asked me to see personally to your safety."

"Are you serious, Paul? This is shocking news!"

"Strange things have been happening lately," Blottingham said. He ran a hand over his hair. "A large number of prominent youth have been sexually molested last night by gangs of men—"

"You don't say," Proctor cried.

Blottingham peered at him. Proctor was acting, shamelessly acting.

"Yes. The Unifier doesn't want anything like that to happen to you, Res. As I said, he has asked me to make sure that you are protected."

"What have you got in mind, Paul? A special guard? These gentlemen here. . . ?" Proctor gestured toward the dour detectives.

"These gentlemen will escort you to your cubohome and will guard it against abductors," Blottingham said. "We shall place a tap on your tel-line so that threatening calls may be traced at once. I know that this is inconvenient, but it should last less than a day. The moment Sidney and Regina are freed. . . "

Blottingham touched his hair and looked at Proctor and away again.

"Until Sidney and Regina are found?" Proctor asked.

"Precisely," Blottingham answered. "The sooner they are freed, the sooner can we dispense with these precautions."

He looked up and met Proctor's eyes, but Proctor didn't hold the glance. He turned his head toward the desk, toward the large holograph of Unsler that hung above it.

"I respect the Unifier's wishes," he said and rose. "Shall we go now? Or will you allow me to gather some scriptos?"

VIII WAKENING IN BRANCO

MIRI WALKED THE streets of Branco with occasional glances back. Deep meditation in the aseptic BTA cubohome had brought forth the guidance she'd sought. In the afternoon

she had quietly slipped out of the building. Soon, wearing a new jump suit she had bought in a nearby arcade, she made her way to East Tower and down to Level 13. Her guidance had told her that Frenchy would be hiding in these domains of poverty, disease, and crime—back home, in territory he knew well.

Noise raged all around her—the noise of squabbling women, of music loud beyond sufferance, of quarrels in alleys, of bargainers at stands. Branco lived in the streets. As far away as she could see—the Ring curved gently out of sight—stalls lined the sidewalks, big, small, covered, open, screaming in a thousand colorful signs and with the cracked voices of hawkers.

She looked back again, troubled by a sense that someone followed her, but she saw no familiar face in the throng. People jostled and pushed. Teenagers ran past her yelling. Wild, unreflecting people.

Odors bombarded her senses—the sweet smell of decaying garbage and food, of fecal matter, of air singed with ozone by escaping gravitron, of unwashed bodies and clothing worn too often without laundering.

Maintenance stopped around Level 30. In official eyes these people didn't properly belong to Union.

Yet how much more lively, racy, alive everything seemed. Just look at the walls, everywhere decorated by the strangely obscure paintings of the people. Initials, parts of words, numbers—they all glowed, radiated. On the street vendors sold fruits and vegetables—real fruit and vegetables—obviously obtained by illegal barter with nearby tribes and smuggled into Ricardo through subterranean routes below the pit.

How, in this world, would she find Frenchy?

Then, up ahead, she saw a familiar sign. The Scuttle-but, a coffee house where she'd met Frenchy years ago on an artistic expedition to sketch 'bottoms' types.

A linkage point. Unconsciously she had been drawn to this place, possibly the bridge between past and present. Here she might meet Frenchy again.

She made for the place thinking of the Madonna who wove the psychic universe on her magic wheel. On Madonna's spider web, the Scuttle-but was a tiny knot connecting two destinies—his and hers.

A large place with many tiny tables, closely packed together, awash in the murmur of voices. Janeweed smoke rose in walls and hung in clouds about the place, its smell familiar to Miri from Cult sessions.

She sat down against a wall and ordered coffee. It came, but she didn't drink it. She listened to conversation on her left, watching the surface of her cup, the swirl of steam on the black liquid.

A fuzzy-haired man spoke to another in a low, urgent monotone. He catalogued the sins of structure culture, predicted its imminent doom. A shitting jut, he said. Union was like a tired old man. It didn't want to come up any more. You had to read porn to make it twitch. Education, art, religion, science, exploration—all a shitting jut. Children floated in a vacuum. A shitting jut. His voice hissed on breathlessly.

Familiar dirge. Miri had heard words like these years ago. The speaker's aura touched her slightly. She sensed his deep alienation and moved herself slightly to the right, out

of his influence. As she did so, she looked up and saw a woman weaving her way between tables toward her.

Miri immediately recognized the cool, poised movements of a Cult sister. Thousands of hours of meditation, body and mind control, showed in the woman's face; the woman didn't look at Miri. She came in Miri's direction in a brightly flowered sari.

Passing the table, the woman slid an object toward Miri. It half rolled, half skidded toward her, silver and green. A ring. Miri picked it up with a quick glance toward the retreating, flowery back of the woman. She *had* been followed.

Miri looked down at the ring, turning it. The tarnished silver setting held an oblong, turquoise stone with black-white markings. For a second she stared at the pattern. Then she covered her face with her hands in an involuntary, abrupt motion.

The pattern in the stone had unlocked memories suppressed by hypnotic command, memories of meetings with Sister Serenita, the Cult Mother. The meetings extended over a period of seven years. Until this moment, Miri had not consciously realized that Serenita was the Cult Mother. Only the coven elders knew the identity of the Lady's living representative on earth. Miri had also known it, but the knowledge had been kept from her conscious self.

The flood of recall caused an involuntary shudder. Now Miri understood the significance of her blemish and what it meant to 'have a role in history.' Against the backdrop of her memories, the events of the last few days suddenly seemed fraught with meaning. She sorted the memories in her mind.

Seven years ago, at the annual consultation of the Sybilline books, the fall of the oracodice had given Verse 39, Great Change. This fact had been kept from the Cult membership, because Verse 39 signified a momentous change in human consciousness, a dramatic transformation in culture. Each verse had nine lines. Three of the lines had been accented and therefore contributed to the meaning of the oracle. The first line had said: 'Ecosphere: flowers in the meadow.' The second one had said: 'A queen confuses the Male.' And the third: 'The blemished artist leads the remnant.'

A search through the ranks of the Cult had identified Miri as the blemished artist—she was a micromosaiker and had a birthspot on her cheek. At the time she was a novice engaged in the acquisition of the most rudimentary of arts. The Cult Mother called for her, to look at her, to see if the oracle might have meant Miri rather than someone else. Satisfied for the moment, the Mother sent her on her way. From time to time thereafter, other meetings had been held to see how Miri progressed. Each meeting concluded with the hypnotic command of forgetfulness, given under the influence of this ring—Serenita's own ring, worn on the finger of Saturn on the nun's left hand. She had been commanded to forget; only full adepts could know the inner mysteries, the Lady's visible representative.

There had been a meeting—she recalled now the relief she had experienced then—when the Cult Mother had concluded that Miri couldn't be the 'blemished artist.' She had just married Frenchy. He had entered the service academy, but he was nevertheless still very much a smuggler from

Branco. In numerous other consultations of the oracle, the Cult had learned that the 'blemished artist' would marry a figure capable of delaying or impeding the Great Change, a figure of importance, prominence. Frenchy gave no such promise at the time, and no one bothered to ask the books about him. Later, when Frenchy rose with meteoric speed through the ranks of BTA, Serenita changed her mind, and Miri's sessions resumed.

Recalling this, Miri shuddered again. She didn't want to be one of the so-called 'queens of the change.' She didn't want a 'role in history.'

What did it mean, Great Change?

Serenita said that the ways of the Male would yield to the way of the Lady. Great Change was a time of rejoicing. The oracle had spoken of the Ecosphere, of flowers in the meadow, of a healing. Change, Serenita insisted, was in the minds and hearts of people. But Miri had always understood that verse in more cataclysmic terms. As an adept she had been permitted to study the ancient texts, and commentaries on the Change never failed to make the point that Verse 39 meant an ending, an upheaval, a disaster. If the blemished artist 'lead a remnant,' the clear implication was that some would remain. But what about the others? Would they be recycled, one and all, into the cosmic soul vats, to be born again into another age?

Miri didn't want to live through anything like that. What would it mean? The fall of the structures?

She had posed that question to Serenita as well, getting evasive replies. Structure or Hinterland—it didn't matter. The ways of the Male

dominated both worlds. They would be swept away by a change in consciousness. That might or might not mean the end of structures. Structures didn't matter. They were merely shells.

Another question that had plagued Miri—and once more plagued her now that she remembered it all—was *how*. How would she lead a remnant? What remnant? From where to where?

Serenita's words still rang in her ear: "Miri, you think like the Male thinks. Causes, effects, motives. The Lady works by indirection. If you're the person chosen to do her will, you'll be led in the right paths. At the right moment, you'll know what to do."

"And the queen who confuses the Male? Who is she?"

"That's not something you need to know."

Miri dropped the hands from her face. Her coffee was a dark, deep shining in front of her. The steam had disappeared from its surface. She pushed the cup aside and looked at the ring again. It was clearly Serenita's ring, the only one she wore on her pale hand. In the concluding hypnotic sequence of her meetings with the Mother, she had stared at the ring with utmost concentration. She recognized every detail. Now she held the ring. It meant that Serenita had reached a final conclusion—Miri was the person signified by the Sybilline books. It also meant that the time was nigh. The secret had been unlocked so that Miri could act with knowledge. And finally, disturbingly, it meant—or Miri sensed that it meant—that Serenita had passed on to her, to Miri, the symbol of her authority.

My God! Miri thought. *That means*

I am a full adept. It means I must be pregnant. For to achieve the knowledge of completion, a woman had to have the final experience of womanhood, birth or, at the least, conception.

She shuddered again, throwing off psychic tension, and became aware of her surroundings. Next to her the fuzzy-haired man still hissed in a monotone. Doomed, finished, a shitting jut. The end, kaputt, knock-out. . .

Miri rose hastily and ran out of the Scuttle-but. She wanted to get out of here, away, far away. She didn't like her inner feelings. She had to dissipate her anxieties in motion. She had to find her Frenchy, sanity, something familiar, something to hold on to.

After a while she calmed herself. The throng of people, the noise, the colors reassured her. The shadowy memories slowly settled down as part of her conscious awareness. Whatever happened, life would go on. The Lady wove fate. From her fingers issued the pulse of existence. Not Miri's place to question cosmic forces. Only the Male pretended to rule over the world. . . a microbe on the skin of the legendary elephant. Whatever will be, will be.

She passed a clump of people from whose center a young boy's voice rose up with the scripto-vendors hawking cry.

"Getcher, getcher, getcher scrips. Getcher scrips and read aboot his Finkoo's kiddienap las naye. Getcher, getcher, getcher scrips, Flame's been snufood aeught."

It was the most distilled form of Branco dialect.

Caught by the urgency of the voice, whose broadcaster Miri

couldn't see—the clump was a whirling of hands and arms from which people broke away reading intently—she joined in, penetrated the clump, pressed a coin in a dirty urchin hand, and came away with a small, thin scrip.

She nearly stopped in her tracks when she read the bold headline across the front page of the thing.

SIDNEY KIDNAPPED BY BTA BIG.

She stopped to read the story. All around her people were doing the same, and there was a buzz of excited talk. People ran off; others came. In minutes the newsboy had sold out his supply.

The story itself was brief and factual. But much of the rest of the paper carried speculation about the meaning of the unusual event.

The story described how Rivera French, well known to the people of Branco, had penetrated Top Level North last night. He had immobilized the palace guard by chemgun and had abducted Sidney Unsler. His whereabouts were unknown. Sources within the Unsler household were cited as authority for the dramatic disclosure.

The speculation went far beyond that bare account. They identified Frenchy as a man close to Reston Proctor. They linked the mysterious round-up of flames the night before to the abduction. They saw this move as the opening sally of the much rumored revolution—

Revolution?

Miri sucked in her breath. Blood pounded in her throat. For a moment she became oblivious of the scene around her, which began to clear rapidly of people. They ran, they disappeared into buildings. She read with

total amazement, aware for the first time of Frenchy's probable involvement in some kind of surreptitious political movement.

So she, Miri, had already been associated unknowingly with Change—be it great or small. Her husband a conspirator? It seemed that he was.

Frenchy, oh, Frenchy! she thought, overwhelmed in a delayed reaction by a crazy fear for her man. Abductor, revolutionary?

She bent over the scrip again, searching for additional clues.

She stood reading when a small man grabbed her by the elbow.

"Lady," he said—it came out 'leudydy'—"Can't yer see the squeezoos? Ya better getcher rumpies uffa da belt, heay? Reading a scrips now, leudydy! Open yer eyes."

Miri opened her eyes and looked about. Far behind her on the movebelt she saw the blue of police uniforms. The man hustled her along toward a door. She followed him meekly. They entered into the close, fetid atmosphere of a bar. Young men on stools and around tables looked up in unison as the two entered.

"An ufflevel chips I picks up reading the scrips in front of the squeezoos?" a young man nearest to Miri asked. He had come erect on his stool. His tone was alert.

"Where you at?" the little man asked. "Don't yer read?"

He waved his own copy of the scrips at the young man.

"Frenchy stole the Finkoo las nayte; they's searching toyteen."

"Our Frenchy?"

"The same."

Young men crowded about them. Miri eyed them. These total strangers

discussed *her* Frenchy in tones as if they were on the most intimate footing with him. They broke into exclamations now crowding together over the articles the small man had spread out on the bar. One of their number read aloud. Miri gathered that only a few could read. Then they conferred. They concluded that Frenchy must be hiding in Branco, they listed possible hiding places only the Kayring would know about.

She watched them with apprehension and hope comingled—young men in hand-embroidered jump suits of various colors, some with faces pockmarked by gravitron blisters, some bearded like tribesmen, dark, light, black, white, chinoise. Beyond the group over the bar a slow-moving colormixer wove patterns on the glass screen. Drink spigots gleamed with curving necks. The stout bartender wiped a glass at the far end.

"Ya've yapped sufficient," the small man said. "Naw clear it it uff, clear it uff. Squeezoos will be busting in heay. Move uff naw."

"What aboooot the chips?"

Eyes focused on Miri.

"What aboooot yer?" the small man asked. "Whatcher doing in Branco?"

Miri swallowed. "I'm Miri French," she said. "I'm looking for my husband."

Eyes searched her face, some with narrowed suspicion, some with an expression of pleasure. Then one man said: "It's er. I seen a pitch. That mark on er, see?"

Involuntarily Miri reached up to touch the birthmark on her cheek. Heads began to move up and down.

"Cum oon, then," the small man said. "Uff with yer and er, uff to Dachsy. Dachsy must be toold."

In a body the men made for the back of the bar. Miri moved in their center.

A PROMISE SATISFIED

UP AHEAD REGINA saw the dark line of pines across the ridge, against the lighter darkness of the star-spangled sky. They made for the broken silhouette of some sort of ruined building up a steep, slippery gradient amidst a rustle of leaves.

She sobbed in Mycal's wake, sobbed with fatigue. And then she suddenly stopped because It stopped. She realized with a joyous feeling that she was herself again. But the feeling was more than that. She felt incredibly well, giddy with a kind of joy.

She cried: "Mycal, Mycal!"

Bono stopped and turned around, alerted by the change in her tone. Could she be over it? He put his hands beside her cheeks and tried to see her eyes in the darkness.

"Yes," she said. "It's over. I'm all right again."

He whispered: "Thank God, thank God."

"Mycal, it feels so wonderful. . . I. . . I want to sing or something. Do you know what I mean? Did you. . . ?"

"Yes," he said, remembering the feeling. He had felt the same way on the morning of the ball and recalled that sense of miraculous healing, the loss of trauma.

Regina felt light and clean. Despite a very arduous day of hiking and the physical weariness she felt in arms, legs, and back, she was refreshed and rested as if she'd just awakened after hours of sleep.

"Hungry?" he asked her.

"Ravenous," she cried.

"Come on, then. Let's go up to that hut. We'll hide there and rest for a spell—provided it isn't occupied by a bear. Then we'll head out again after a bit."

He felt thankful for her recovery but anxious about that trail of gravitron. It haunted him, it made him want to move on, ever farther. He would let her sleep for an hour or two. Then they'd strike out again toward the dry bed of the old Ohio.

Inside the building they unloaded the clumsy packs he had fashioned out of oxygen-canister straps. He inspected the place by the light of a torch and saw silver-gray wood of ancient vintage, the inside of some sort of park structure. He cleared an area of brush and leaves and handed her the torch.

"Open some cans," he said. "I'll try to find us some water."

Regina sat for a moment savoring the pleasure of being off her feet, the musty odor of vegetation, so different, so much more pungent than in her roof-top garden. At the same time she continued to feel giddy release. She ached with pleasure—and longed for pleasure. She was hungry and tired and lively all rolled into one. It was stimulation, she realized, nothing more. Nevertheless. . . . Her body had been shrivelled up under the assault of pain. Now her cells expanded all together and broke into a chorus of gladness.

She set to work unpacking blankets from the packs, finding canned food.

She thought: *Wonderful, wonderful. I'm in Hinterland. I'm feathering our little nest.*

She didn't think about the implications of her internal words, feeling as

close to Mycal as it was possible to feel. She recalled his anxious ministrations the night before when she had lain under that huge bale of hay sobbing with terror. He was so sweet and kind to her. She was his and he was hers. Very fateful.

In the bottom of the pack, groping in the light thrown by the hand torch, she found golden spoons with the Unsler flower set into the handle in relief. She arranged the spoons next to the cans, removed the can lids. Mycal had insisted on taking only protein mush. The smell would have made her turn off under ordinary circumstances, but now she was so hungry, she took a nibble from the can. The taste was delicious.

This done, she unzipped her jump suit and climbed out of it—a girl in panties and a white blouse. Involuntarily she ran her hands over her nipples, belly, and down the insides of her thighs. She trembled with an unaccustomed surge of desire, surprised by it. She inferred its cause as the readjustment of her body and a consequent euphoria; nevertheless, her mind swam with visions of copulation for a second before she controlled herself.

I hope I don't smell too bad, she mused. She had had no chance to bathe, nor any inclination. But her deodorant was a secret formula that released odor controllers long after application. Her hygienist had invented the cream expressly for her.

Outside Bono sniffed the air, searching for water. He knew the smell of a spring or brook. He hadn't been in the Acropolis long enough to lose his senses. He moved on. After a while he sensed a deeper moistness in the air and soon found a trickle of water at the

bottom of a rock face. Moist fingers touched his tongue testing for pollution, but the spring seemed pure. He collected water in the bottle and went back to the building on the ridge.

When he entered the hut, he saw Regina on the floor draped in a blanket. In the dim light of the torch which she had propped up so that its beam fell on the roof and reflected from the silvery redwood, he saw her eyes gleam. Yet there was a dull look on her face. She sprang up and ran toward him. She wore only panties and a blouse. She embraced and kissed him while her midriff pressed into his in an unmistakeable way.

For a second he experienced annoyance. Now that he was anxious, Regina was amorous. But his annoyance dissolved in passion. Tonight there was nothing to impede his groping hand.

Their stumbling movement toward the blankets on the floor upset the propped-up torch and it went out. They made love in total darkness.

Bono rolled on his back, tired, a little sleepy, a little sad. The moment had come and fled too quickly. Her body had tasted much like those bodies on the other side of the refinery in Wellhead.

By his side Regina stirred restlessly. The brief, clumsy encounter had left her stimulated but dissatisfied. She was sure she hadn't conceived—*Conceived?* She kept having that stray thought when in fact she meant something else. He had left her hanging. He had neither the experience nor the sophistication to match her appetite. She hesitated for a while, but then, impelled by hungry euphoria, she engaged his attention

with tiny kisses on neck and chest and gently exploring fingers.

For Bono the ensuing time of sexual experience was like a mad dream of flesh, a wild tumbling and floating, a stormy trip through pleasure gardens by comparison with which the Wellhead nights seemed a stumbling through a sickly cabbage patch. She appeared to him a Whore of Whores whose indecencies were made the more outrageous by a seeming innocence. Someone so frail and sweet had powers of endurance and an angry, growling, purring, biting passion he had never thought possible in a girl. She groaned and cried in orgasmic culminations. The sound went out of the little hut once, and then later again, and then later—when Bono had thought that the last pleasure had been drained from their trembling, sweating bodies—yet once more. And then she fell asleep as soundly as a baby, leaving him bruised and cross-eyed, holding her and breathing her perfume as it seemingly steamed up from her flesh in the cool, moist, mountain air.

Ten minutes, Bono told himself.

An owl hooted mournfully, and yet it was a glad sound. They lay in an environment where animals thickened the ecosphere again.

Ten minutes, then he would wake her and they'd move on again. They *had* to move.

Ten minutes, ten fingers, ten commandments, tents, tentacles of creeping sleep, of mountain fog, of owl hoots falling from the pines. . . .

CAESAR'S ABORTED INITIATION

FRENCH WAS OUT there, far out, on the edge of sanity.

He ran down the narrow walk of the service chasm in the light of gravitron sparks. Sidney's heavy body went bump, bump on his shoulder with every step, and Sidney's right foot, encased in a heavy cast, hit French rhythmically on the buttock.

The life of action, it went through his mind. *The life of action*, he huffed. *Adventure*, he huffed. *Danger*, *Tests*. *Challenge*. *Battle*.

French often suspected that he was crazy. Now and then he knew he was.

Why did a man choose a life that had such episodes in it? Times when all reasoning, deliberation, wonder, and examination were banished and a whole life hung on the instincts that guided feet over an eroded, dusty, treacherous path.

French had become one with his physical processes—the burning in his lungs and the pain in his limbs and shoulder where Sidney, chemmed again when the police had approached, now pressed down heavy and limp. Meanwhile French's brain drifted off like an uncaged beast into mischiefs of fantasy.

He exulted over visions of death.

He saw himself stumble forward, hit by bullets from behind. Cut loose from his grasp, Sidney fell against the flimsy railing beside the path and careened down silently, not aware enough to scream. The vision lacked drama, and French imagined other deaths in quick succession—a death-fall through a shaft, holding his victim in an eternal embrace; death in the crush of a collapsing level; death in the radiation belt where he had once or twice thought of taking his prisoner; death at the hands of a maddened mob

intent on lynching Sidney but mixing their identities.

Death appeared sweet and inviting. French had lost his will to live although his body and brain disagreed and used his habits and training to keep on surviving anyway, just for the sheer damn hell of it.

French let it be.

He didn't mind living a little longer. He would pick his own style of death. He'd die with a bang, an explosion, a flash. The world would know that he had sacrificed himself to save his honor.

These thoughts arose from a dull conviction that Miri had died at the hand of the flames. French fancied he sensed her absence telepathically. When the police had found his hiding place—something he would never have thought possible—he'd seen that as an omen, a sign.

Gasping wildly, he stopped and turned. Sidney's cast-heavy foot hit a wall.

It seemed to French that he had gained on his pursuers. He had left them behind around the turn. For a second he listened, holding his breath. He heard gravitron pulsing, a kind of silence. But then he could distinguish the far-off rustling of steps.

They were still coming and they had no need to hurry. With every step French had left behind a clearly visible trail in the plastosteel dust of the walkway. It would appear sharply outlined in the blaze of their torches.

He caught his breath, chest heaving.

Momentarily he wondered—still half in fantasy—if he should go on like this, burdened by Sidney. What if he just dropped the vile flesh-sack into the chasm? Union would owe him an

eternal debt. Then, free of this heavy Other, he could swiftly escape his pursuers and wander through Ricardo, a dangerous seeker after Miri; a vengeful seeker, alone, unimpeded, slipping from disguise to disguise; a hunter after the ultimate prize of life, the love of Another; a stalker after those who'd done her harm; a gardener with a scythe in hand; a reaper of chaff.

Or should he, instead, do what he had determined to do in saner moments—use Sidney as the hostage to force her release? But what if it was too late? Still, there might be hope. . . .

But he couldn't stand here any longer, gasping. He turned and ran on. Sidney Unsler went bump, bump, bump on his shoulder; the cast spurred him forward with blows on his rump.

The whole mad, undeliberated sequence of events went by in his mind as he ran—the violent entry into Top Level North, the furtive trip through Ricardo guiding what seemed an empty jump tube alongside his own, the choice of a hiding place—an excellent, secret spot only a few members of the Kayring gang could know about (and yet the police had found the spot nevertheless, a poor omen!), the wait, the proposition and Sidney's disbelief, troubled sleep, discovery, and now his flight.

The pattern was one of madness and disorientation conceived by a man stupified by anxiety and grief. The life of action fell to pieces without a little bit of thought.

French had chosen as his hiding place an ancient crane-operator's booth made of silcoplast (silcoplast, alas!) to resist graviton and left up

inadvertently after construction of East Tower's southern quadrant. Over the years the booth had been surrounded and obscured by other constructs. It was totally private. French knew about it only because some boys he had run with had found it on forbidden explorations of the service chasm.

He dumped Sidney on the floor of that booth toward early morning. The Fire sprawled out, unconscious, still under the spell of chemgun gas administered to him as he had dined. French sat down beside him. He set up a small visi-recording device he'd taken from Sidney's domain. Then he waited and waited and waited for Sidney to sleep off the effect of a full-force chemblast. As he waited, resisting the urge to fall asleep, French spun schemes of extortion and escape.

He didn't plan, exactly. He ran after feverish imaginings. The time of planning was behind him. He had broken with his past. Sidney's abduction would almost certainly derail the Secret Agenda. And even if the Revolution went forward successfully, Proctor would no longer want him on his team, not after this. But the Secret Agenda couldn't succeed. How would Proctor get an Interdiction unless he gave up the silco-parts? And what if he did?

It must have been nine or ten in the morning when French started up from a doze. Sidney had begun to stir. He came awake, his long face uncomprehending and disoriented, his eyes blinking in the beam of French's torchlight.

A face of dissolution and arrogance: a long face with thick, sensuous lips, red even in the harsh brightness of the torch. The lips contained

Sidney's total character. They were mobile and changed shape with his thoughts, while his eyes were cold, malignant, and fixed in a stare.

His voice husky after long silence, French explained the situation to the celebrated *Ignis*. Sidney didn't understand him immediately, and French had to repeat himself several times.

At last Sidney's lips curled contemptuously, and he laughed without much humor.

"I understand, I understand. This is a practical joke, eh, Tanti? That's you, Tanti, isn't it? Your make-up and wig don't fool me. Well, I see through it. Is this an *initiatio*? Did you boys decide to test the mettle of your Caesar? You will find me tough and unyielding in the test. How can the Fire be burned, my dear Tanti?"

"I am Rivera French, as I said, lately an official of BTA. You really are my prisoner, Unsler, and I mean to get my way." French pointed his torch at the small visi-recorder set up next to one of the jump tubes. "I want you to tape a message to your friends. Here's what you say."

Again Sidney laughed. "Slowly, Tanti. Your Caesar can't be made to yield. He is a man of courage. *Vir fortitudo*. I'll say nothing, nothing at all."

French stepped in front of Sidney who sat on the floor leaning against the wire-backed silcoplast booth.

"Snap out of it, Unsler. This isn't any kind of game your pals have thought up. This is for real."

Sidney guffawed, and in exasperation French hit him across that sneering mouth with the back of his hand.

A bitter thought flashed. *There is no reality. There are only games. His game is as real as mine.*

But French wanted Sidney to play French's game.

The Underunifier wiped blood from the corner of his mouth. His expression had hardened, but French hadn't got through to the man. The cold eyes stared. The red lips worked.

"You can't fool me," Sidney said after a moment. "You're Tanti, no matter how you disguise your voice. Caesar can't be broken, not by a slap, not by anything. I have passed through greater crises. I am a spirit with many bodies. I hover over entire ages. I am Caesar, Napoleon, Hitler, Tsetung, Phandi, and Pugilista. My hands have gestured and trillions have moved to do my bidding. Go ahead, Tanti, hit me again. I can stand initiation. And I will be generous with you, after the ordeal. You and I, we shall be brothers. You'll be my godfather, my initiator, the witness of my fortitude. . . ."

Sidney went on. In the midst of this French turned away from him and looked around for a suitable gag. He found an old towel, soiled and torn. He himself might have used it for some purpose as a boy. The cloth dusted with age. He gagged Sidney and then tied his arms behind his back. Finally, he placed the man head first into one of the jump tubes.

Sidney struggled for a while, his legs extending beyond the tube's rim, one foot in a cast. Then his motions subsided.

French sat down.

He decided to give Sidney an hour in the tube. That would sufficiently soften the man. French had his doubts about Caesar's courage in a real situation of acute discomfort.

Then, exhausted beyond measure, and lulled by the song of gravitron,

French fell asleep despite his best intentions.

He awoke to a furious metallic noise. Someone approaching the silcoplast booth had stumbled across the trip wire French had rigged during the night and had caused a pyramid of empty lubrican drums to fall.

Blood beat in French's throat. He ran to the tube and hauled Sidney out. The long face was gorged with an accumulation of blood. Sidney's eyes were dull with pain or terror. The dirty gag obscured his expressive lips. French had slept long. He felt the pulse of restored energies. Therefore Sidney must have been confined for hours.

French checked his chemgun. He pulled the gas mask over his head and pressed the trigger, releasing the last of the gas left in the ammunition cartridge. Sidney slumped and French threw the gun aside. He ripped the gag from Sidney's mouth, placed the body on his shoulder, and climbed out of the booth by way of a manhole and rickety stairs.

Above he heard the police bang on the door. When they entered, chemgas would incapacitate them for a while.

Sidney went bump, bump, bump on his shoulder.

Where to go now? What to do? French pondered.

In his hasty flight, French had left behind the visi-recorder. The police had found his hiding place. He had lost his base of operations.

He would go down, he decided, down into the abandoned tunnels of the ancient undercrust.

The police wouldn't search for him down there. The tunnels were not well known except to gangs operating

smuggling rings. And if they followed him, he could easily elude them.

He would think about next steps once he was safe.

French stopped again, unable to continue at this pace with such a load. Now, far behind him, he saw the jerky motion of torches and several running figures.

Somewhere up ahead there had to be a stairway or slide bar that would allow him to descend.

He gave himself a moment of breathing time, watching the lights jerk in the hands of his pursuers as they ran. Then he turned to continue and saw with shock another group of men coming toward him, very close, from the other side. They must have entered the service chasm seconds before through a door.

French stepped to the railing, and when the men drew up before him, their torches a blinding wall of light, French cried:

"Not another step, people, or Sidney Unsler goes right down the chasm."

Loud laughter answered his command. The voice said in the thick Branco brogue: "Go ahead, Mr. French; dump the bastard. We don't give a shit."

A short figure detached itself from the lights and came toward him, backlit and therefore obscure. Nevertheless, French recognized Dachshund Jones and saw that the man smiled.

"Dachsy!"

"The same," Dachsy answered, grinning. "Before you say anything else, sir, let me tell you this. Miri is safe.

She's with us."

GANG COUNCIL

YOUNG MEN FROM the Kayring gang had arranged empty crates approximating an oval in a well-lighted area of the murky warehouse. The councilors sat around the circle and listened to Frenchy with troubled expressions but with a forward-leaning concentration as great as Miri's own.

His words mesmerized her for several reasons. First, she'd lived with this man skin-to-skin, as it were. She was an accomplished psychic. Yet she'd never suspected that he had plotted revolution. Second, what he said slowly filled in an empty matrix in her mind, cell by cell, and she gained an insight into the crude mechanics that underlay the Great Change. Finally, she realized that Frenchy had made a momentous decision in the last several days?hours?He had decided to cut the cord that bound him to BTA and upstriving ambition. He told these people—they were total strangers to her but to him members of his larger family in Branco days. . .they appreciated him, considered him a hero, and Dachsy Jones' introduction had been warmly admiring—he revealed to these people the entire intricate schematic underlying something he called the Secret Agenda. But to what end did he say all this? What conclusion would he reach? Why had he pleaded with Dachsy to call the council?

Half her mind retraced the immediate past seeking clues, lingering over the glorious reunion, the tears . . .the hungry, cramped, repeated embraces. . .the long and tender looks they had exchanged, so happy to be together again. But after a while Frenchy had sobered. A look of dis-

traction had come over him. He had excused himself to find a tel.

Outside police were searching every centimeter of Level 13. They had already rummaged through the warehouses and had sealed all the doors. The gang had known to enter here without disturbing the seals. Nevertheless Frenchy had gone off on tiptoe. She watched him talking on the tel in a brightly lit supervisor's booth in the center of the warehouse, surrounded by small yellow forklift trucks parked in orderly rows before ceiling-high, gleaming stacks of reddish plastosteel rolls.

He had come back to her after a while, his face darker even than it had been when she'd first seen him, even more weary and fatigued.

"It's no use," he sighed. "Proctor has gone mad. I checked with Clemens who wouldn't talk but who gave me enough of a hint so I can piece it all together. I reached Proctor in his cubohome. The man seems to be under house arrest but not a bit bothered by that. I asked him to level, but he lied to me."

He stared at her, through her.

"I don't know what you're talking about," she said.

He glanced at her, as if awakening, said: "Of course you don't, girl. But you'll hear it all soon enough. Now what I need is your help. Stick with me, baby. For me, at least, there is no place but out."

Miri looked across at Frenchy with an emotion of affection. She'd stick with him, through thick and thin. She loved him, after all. Wherever he went, she went.

Across the circle French sensed Miri's emotion. He addressed much of what he said to her. His eyes swept

the faces of the councilors, many of whom he'd known well as a boy. But his glance returned to Miri's face. Her eyes gleamed with a strange kind of brightness. She sat leaning forward, lips slightly parted, hands folded in her lap, very still. She wore a green ring he didn't recognize.

He went on inexorably and step by step recounting the history of the past few years. He knew himself a traitor, revealing secrets not his to reveal. Or was he, perhaps, merely an unconscious agent of the Kayring gang sent out years ago by a pulse of collective will to secure gang-survival now?

He felt no real guilt doing what he did. His heart belonged to Branco, always had.

The cells of Miri's matrix slowly filled in, and at one point she began to experience the wild flash of insights. From the matrix—a pattern. From the pattern—a forecast of events to come.

This was a story of two parts, she realized, and Frenchy only knew half of it. But someone knew the other half, and that would be...Regina! Miri wondered if Regina really knew her role. Or was she also, like Miri herself until hours ago, a willing but unconscious agent of Madonna's spinning hand?

And had she, Miri, also played into the hands of fate? If she had listened to Frenchy's pleadings and stayed away from the ball—would there have been an Operation Hairy-Scary then? She wouldn't have been in the embassy and French wouldn't have gone berserk. He would still be up there arguing for sanity with Proctor. Didn't the oracle say that she would marry a man who could delay, prevent the Change—if permitted? Had she, unknowingly, derailed the ra-

tional unfolding of events? Would Regina confuse the Male in turn? Which male? Bono? How?

Her excitement increased.
She marvelled.

Her Lady of Indirection. The subtle Female's dark, healing work. . . . In Cult lore they likened Madonna to the long-legged stork picking puffed-up, croaking frogs from a rotting log with a sharp beak. She was the docile cow dispensing milk with her watery eyes staring stupidly into the green, her jaws working slowly on the cud. Or yet again they likened her to a carry bird shamelessly feeding on the dead. Or yet again to the phoenix who burned in consuming psychic fire, who fell down in ashes that fertilized. She was the cunning snake and meek dove of Jesus Christ. Somewhere she had seen Madonna with a hundred arms, festooned with skulls, and also as the Ocean Maid dispensing nourishment.

Nature red in tooth and claw. Nature green with bud and seed.

Slow and subtle. Cunning and indirect.

She insinuated herself into the cracks of the Male's concrete. She abided and waited for the coincidence of events. . . .

And at the end she prevailed.

She could be yoked, but not enslaved. She was a whore you never used, a sea you couldn't drain, a song you couldn't break by singing, a time you couldn't hold in your hand. . . .

Around Miri the warehouse with pyramids of plastosteel coils, straight corridors, neat yellow forklift trucks, the blaze of lumiglobes set in a girdered ceiling seemed like a mausoleum, the geometricities of logic. While in her now burned an

intuition, like the Phoenix herself, of a world burgeoning in utter silence. The Lady was Helium, and if she refused to flow, there would be stillness.

Then Miri heard French winding up. He predicted structure collapse at worst, great turmoil and destruction at the least. He called upon the council to reach a great decision. He asked them to leave Ricardo using the ancient tunnels of the undercrust for a new life in Hinterland.

The words nearly paralyzed her. Not she, *he* would lead the remnant. Something had been amiss in the oracle.

French sat down and looked at the faces in the circle. The council stirred uneasily, frightened by the proposal, embarrassed, perhaps, that he had made it. French might be the 'best loved son' of the Kayring gang, as Dachsy had said, but for that reason, also, he was an outsider.

French sought support in Miri's eyes, but she was still away in some contemplation of her own. Yet . . . how oddly her face shone! Could she be meditating in the midst of this company? Was that brightness the nimbus he sometimes saw about her head and shoulders? Could others see it too?

There were nine councilors and Dachsy now turned to Number Two and asked for comment.

The man rose, cleared his throat. "Dachsy, I don't know. These are strange times. The Fink lies over there unconscious." His hand gestured toward a group of young men against a wall. "Frenchy tells us we should abandon our turf, but I don't know. We worked eight years to reach one ton of vegetables a month, and in two years we're up to ten tons, and we're

all rich now. I just can't see us abandoning the routes just like that. On the other hand, there's the Fink, and who am I to argue with Frenchy. I don't know, Dachsy. I just don't know."

Dachshund turned to an ancient, shrivelled man. "Phil?"

The ancient rose. "I've been on the council forty-five years and twenty as your Number Three, the graviton having spared me. Dachsy, you tell me I hark back too much, and I guess I do. I remember when we were four small clans and I went out there to catch cricks for a living back in the days when up-level folk thought that crick pincers kept them from going sterile. When that went flat we hunted rat for a while, in the chasm, and we sold rat meat pretending it was mutachick. Then we won the apple route, and I was there, Dachsy, that night we outbid the Ayring at the Peacefreak village they used to have east of what's now the Staging Station, and I broke my ankle in the fight on the way home that night when the Ay-cats fell on us just after you went down into the narrow part of the oceanside foundation break BTA closed in '22. Most of you younger ones don't even know that route. And slowly we expanded, Dachsy. I saw us grow. At first it was ten clans, and then it was fifteen. We grew and we gained turf, humble and deferential like. And then we started using muscle, and now we have the ring as ours and going beyond."

The old man paused, as if to stop, but he merely caught his breath.

"If you think those times were peaceful, you're wrong. I was kid in '98 when mercury in a wellbreak poisoned the anaerobics and the tanks were down for eighteen weeks. A

million starved then, and all of them below Level 20. Oh, I can name them all for you—repair riots in 1002, wall break in Branco when I started in school, the electrostorm of 1008 when the power failed although the grav-drums held and people went berserk and ran like mad sheep and fell into the shafts. And the Helium War of 1011. I remember that like it was yesterday. People said the world would end, but it blew over. . . .”

The old man went on reminiscing for a long time. Finally he sat down, and Dachsy called on the others, one by one. French could sense the mood shifting. They rose and sat down in turn, one after the other, echoing the old man, discounting the dangers, stressing the positive of the current situation.

Gyration toward inertia, French thought, recalling a hundred similar meetings, scores of committees, working groups.

His heart sank as he listened, all too aware of the dynamics.

The last man finished his speech at last, and now all eyes turned to Dachsy. In that moment, French glimpsed motion. Miri had come to her feet. He started at her appearance. The faint glow he'd seen about her head had intensified.

God! The girl radiated as if she were on fire. Her eyes were brilliant, and she drew the attention to herself, away from Dachsy.

She stood with hands extended, her face entranced. French saw awe in councilors' faces. They stared at her with parted lips.

Slowly Miri looked around. Then, in a voice oddly vibrant, she said: “Listen to me, people. There is a prophesy. . . .”

THE PACT

IT WAS DAWN.

With a small retinue, Tack returned from the pine-covered ridge just above the temporary campsite next to the barn where Bono's jump tubes had been found, charred heaps of metal and burned gear. From there, the night before, Fannin had set out with a group of men and hounds to hunt down the traitor. No word had come during the night, and this morning Tack had combined his meditation with a bit of looking out toward the west, but in the deep mists he had seen no sign of Fannin nor had he heard the yelp of dogs.

The meditation had gone well this time, and Tack experienced a stir of pleasure heightened now by what he saw below. A copter had just landed. Its blades still turned, churning dust. He made toward it down a slippery slope. That could be his harem, at last. The *moment* Ricardo fell, the *moment* he knew the Plan had succeeded, he would plunge into a great festival of love to dissolve the Pact of Chastity.

He had been right! Through settling dust fems jumped from the aircraft, unsupported breasts deliciously a-bobbing. Tack abruptly changed his course and headed for his own tent. He didn't dare talk to the fems. The temptation might be too great. Tack wouldn't endanger his great achievement now by a false step that might anger Him-Up-There.

Despite these resolutions, Tack sat down to breakfast woefully aware of his many weeks of deprivation. It was worst when he was rested and full of energy. His mind played tricks. The soft-boiled eggs, the grass-seed gruel, the thick molasses he mixed into it,

the pink of Harvey ham, and even the rolls he broke to smear with honey reminded him of fem-flesh. It was as if his harem sent out vibes. Come to think of it, a couple of the girls were mutants, and they did emit a rut-smell quite strong and compelling once a month. Henrietta. . . . As soon as Ricardo crumbled, he'd scoop out Henrietta like he scooped out this egg, but he wouldn't use a spoon to do so, by God. . . .

To some extent he felt relieved when Robartus announced Dart's arrival and Dart came into the tent. Tack asked for a second table setting. His eyes gleamed mischievously. He would tease the old skunk a bit. During the night Barney had committed suicide back in Ricardo.

Chewing mightily, leaning back in his chair, Tack wagged a finger at Dart, chided him. Couldn't stand to have rivals around, could he, the sly little ferret.

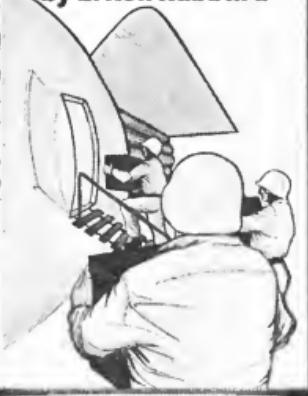
Dart opened his eyes wide, raised his hands in surprise, and asked what Jonny meant. Dart was dusty from his long ride through the night. His eyes were reddened from fatigue.

Tack laughed uproariously. He leaned even farther back in his chair and reached out for a cable on a table at his back.

"Listen to this, Franco," he said, looking at the cable. "It comes from your deputy, Dulsol. 'Barney committed suicide, 0300, 7/7/1056, as per instructions.' It's addressed to you personally, my friend, but we read it anyway. That's good—'per your instructions.'" Tack chuckled. "'I'll keep my eyes on you, Franco,'" he cried, gesturing with the cable. "'You're a sly one, you are. Deep but sly.'"

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At these words Dart went white in the face. He heard an echo of Barney's words from Tack's mouth. He stared in fright at Tack's face, half expecting to encounter Barney's eyes. During that eerie ride in the night, he'd had hallucinations. He turned to the side seeing motion. Not a ghost. Robartus had entered and announced that Fannin was on the radio.

"Come on, Franco," Tack cried, jumping up, "let's see what our Teddy has found."

In the com tent Fannin reported over the crackling frequency.

He had them. He had them both. *Them?* Tack asked. Yes, sir. Bono and Regina. "We came upon them in a ruined hut," Fannin augmented. "They were fast asleep. Naked. I'll let you guess what they'd been doing. All worn out, the pair. Now we need to get some transportation back. I'm not about to trek all day after trekking all night."

Dart observed a transformation in Jonny's features. Tack had been in a funning mood. Now he'd turned purple—a deep purple the more accentuated because Jonny had a light complexion and blond hair. Tack screwed up his face into a grimace whose character Dart couldn't decipher—some sort of mix between pain and pleasure and anger and a kind of nasty joy. Tack's voice was choked when he replied. Transportation would be sent. Tack signalled a man and told him to get the coordinates and to dispatch a ship. Then he turned abruptly and walked off, leaving Dart to stand by himself.

Back in his tent, Tack sat down again before the breakfast table and stared at the food for a second. Then he raised a boot and kicked the table

with such force that the flimsy portable affair buckled under the impact spilling its contents all over the tent.

"ROBARTUS!" Tack bellowed.

His manservant appeared at the tent flap; he knew his master well and stayed out of kicking range.

"Clean up this goddamned mess, God dammit! But do it quietly. I have to think."

The servant whisked and crawled about as quietly as a mouse, keeping close to the edge of the tent, while Tack sat in his chair. He laid his face into his hands and remained some time in the attitude of a thinker.

Tack thought about vengeance. His blood beat at his throat and in his temples. His breath came very hot. Nevertheless, his reasoning powers functioned perfectly. He argued with himself about the Pact of Chastity.

In strict constructionist terms, mutants and structure dwellers were not really people but actually a kind of lesser breed. Right? Right. When a man said fem-folk, he meant *tribal* girls, *tribal* fems. Right? Absolutely right. Therefore Regina Unsler couldn't be said to be a femmy, not by a strict construction of the meaning of the term. Right—right precisely because book nine, chapter seven, verse twenty-eight forbade all intercourse with the Whore, and in the greater context of book nine, the reasoning was clear: they weren't people! Verse fourteen also forbade all striving with beasts. Right, right! But what about verse twenty-eight? Wouldn't that be a violation. . . ? No, Tack decided. Verse twenty-eight applied only when a man sought structure flesh for itself, for the pleasure of it. Tack didn't propose that. Not at all. He proposed to visit vengeance on Bono, and Re-

gina Unsler was merely a tool, merely an instrument to carry that out. Therefore Tack would violate neither the Pact nor the Crestmore if he went ahead with his plan.

"Robartus! Where in the hell are you?"

"Here, sir." Robartus stuck his head through the flap.

"I want a tape recorder."

"A tape recorder?"

"Yes, dammit. Your ears dirty or something? A tape recorder. Move."

The servant disappeared and Tack stood up. He stretched and yawned. His good humor had returned again.

THE SECOND QUEEN

THE COPTER FLEW high over pine-covered ridges. It was a spacious craft with rows of seats in the cabin-facing the pilot, two on one side and one on the other, a small aisle between them. Regina sat in one of the single seats staring rigidly down at thick white mists in valleys, with here and there a tree-top visible faintly in the mist.

She didn't want to look inside, still humiliated by the capture. She couldn't help the feeling that she was as much a prisoner as Mycal. The shame of that awakening! She had opened her eyes and had stared up at a man bent down over her naked form with a corner of the blanket in his hand. The hounds had indecently sniffed her rear. And then had come a certain amount of harsh verbiage. The tribesmen had watched her dress with strange looks in their eyes. They had separated her from Mycal, and later, when the craft had arrived, she had been hustled into the copter very roughly.

She could hear the hounds. They had been loaded into the ship and cowered between seats on the other side, their tongues extended, their lean, rib-marked bodies heaving. Near them sat some of the men, and she could feel their observing eyes.

For the first time since setting foot in Hinterland, Regina experienced with clear consciousness an intuition, premonition she'd had moments after landing in the darkness outside Ricardo.

It had hit her then, an odd sort of awareness that her life would soon undergo a radical change, a great change.

Under the tortures of Adjustment pressure, she hadn't thought about it. Nor, later, during that glorious night of striving, which had dissolved in sleep.

But now she felt it very strongly—and it was more than just the usual culture shock any structure-dweller might have on the outside. It was. . .she couldn't put her finger on it. A feeling, a forgetfulness? *Great change*, she thought; the words kept echoing.

Perhaps it's simply that I'm in love.

She no longer tried to conceal it from herself. From the start she had loved Mycal, perhaps as far back as the ball, certainly after their long night of chaste conversation. She had tried to tell herself it wasn't so, still thinking of Jonny, who had been so very different. But now she knew she'd found the man for her future.

She turned her head despite the staring tribesmen and looked tenderly toward the archangel.

He sat up front, apart from the others, next to the leader of the group that had hunted and found them.

From the facial expressions and behaviour of the men, Regina inferred that the leader was prying and her lover uncommunicative. Mycal sat with a morose expression, occasionally nodding, answering in curt phrases. The other man spoke with rapid gestures of his hand.

She was determined to save Mycal, confident that she could do it. During their long cross-country trek, he had told her enough about Jonny so that she understood why Mycal was fearful. But she also relied on her own powers of persuasion. Jonny owed her a favor—for old time's sake.

A change in the pitch of the blades signalled the start of descent. The copter began to drop, and Regina felt the surge in the stomach so familiar to jump tube users. It signified 'down.'

She pressed her nose against the pane again. Trees rushed by on one side. Red clay ground blurred. Then she saw a circle of tents with an odd metal construct in the center, a kind of tower supporting machinery on a platform. A loaf-shaped device reminded her of a miniature grav-drum. The copter dropped toward a large circle of flattened mutagrass. The clouds of dust rose in greeting and obscured the view.

Nudged by tribesmen, she went forward, following Mycal. As she picked her way down the narrow metal stairs, eyes on her lover—he was being led away toward the...yes! It was the barn where they'd spent a night—men ran toward the copter with bent backs as they passed beneath the still whirling blades. One of them grabbed her roughly.

"Just a minute," she cried, "let go of me!"

"Shut your yap, fem-stuff," the

man growled. "Out here you're nobody, understand? Nobody."

They moved her at forced quickstep toward the camp. She looked ahead, saw an ornate complex of tents connected by low, covered walkways. The ecology flag flapped from the highest peaks. The hands on her arm were hard, relentless.

The men led her into the complex and stopped in a kind of outer room. A man seated on a canvas chair in the attitude of a guard rose and went through a flap into an inner chamber. He reappeared and gestured. Her captors led her to the flap and shoved her through.

Regina caught herself and looked up.

She looked at the back of a man, the back of a head adorned with a horse-tail of hair. He stood next to a bed, cover pulled back to reveal a triangle of white. A tray with a bottle of wine and two glasses stood on a stand. The man turned and moved toward her with an odd expression on his face.

"Jonny Tack!" she cried, breathless with astonishment.

Regina's surprise was not occasioned by seeing Tack, whom she had recognized easily from the back. She was caught off guard by an internal shock of such force that she clutched her head and bent double as if hit by a sudden attack of migraine.

Great Change! Great Change!

Memories assaulted her, a shock of surprise. She was a member of the Madonna Cult going back many years—yet she'd been made to forget it.

Tack's face had released the hypnotically held memories. She had been commanded to forget until she faced him again—and now she

realized in a flash that nothing, nothing in the last few weeks had been pure chance—not her meeting with Mycal, not her longing to escape to Hinterland, no, not even her ravenous sexual hunger last night.

All this had been predicted, vaguely at first, then in greater and greater detail as Serenita had sought more and more information from the oracles, the crystal, visions.

Regina knew herself a full adept now—which meant that she was pregnant, with Mycal's child.

But, shockingly enough, she also knew what her role would be—to confuse the Male, to shatter his powers of judgement, so that an era could end at last, so that the last remnant of a dead age could be buried.

Jonny's intentions were revealed by the bed and its pulled-back cover, the wine, the glasses. But she no longer loved him, she loved another.

Do I want to do that? Do I want to do it?

Who was *she*? Was she flighty, irresponsible Regina, the playgirl, forever concerned with the excellence of her articles of consumption and use? Or was she that other Regina—the one schooled in all the psychic arts?

She realized that she was both—that the many long conversations she'd had with Serenita, several each week, forgotten but now remembered as clearly as anything else, were *her* conversations. That she believed in the oracles and knew that she would do what had been predicted, would have to do them, one way or another, voluntarily or by force. Not *she* confused the Male—he confused himself. She was but the Lady's instrument.

More than ever she hoped against

hope that Mycal would understand and forgive—if he, if she, survived the Great Change which stood immediately before them.

Her odd motion had stopped Tack in his tracks, his eyes puzzled as he stared at her bent-over form. She forced herself to smile as she looked up again. Many years of secret practice had taught her how to command body and emotions. Now she knew how to do it once more. Imperceptibly she took a deep breath and exhaled it, slowly gathering energies from the ether. Slowly her smile turned salacious and her lips curled, her cheeks dimpled. "Jonny-boy," she warbled. "Fancy meeting you here." She held out her arms as he came toward her, a glazed expression in his eyes. He was the Male, stupid and destructive, but ultimately in her power.

IX THE CONSORT

FRENCH PULLED IN the reins of his pony and the horse came to a stop. He nudged the animal forward. In no time his mount walked half submerged in water, groping toward the other side of this depression filled with water seepage.

French let the animal find its own way. Lumiglobes strapped to his arms gave more the illusion than the reality of light. The tunnel was very wide at this point, its ancient walls caved in, and darkness reached out hungrily for the faint gleam of his lamps.

He heard the splash of other horses as the two explorers he had brought along followed behind.

The cold water brought French out of half-sleep—lately the most com-

mon state of his mind unless some new crisis or decision demanded his attention. In the four days since the council meeting, he had yet to see a bed. Organizing Exodus had taken all his time.

The horse strained up the sloping bank of the underground lake and continued on, dripping. Once more French saw rails to the side. The tunnel walls became visible as they left the area of the cave-in. Then, in another ten minutes or so, French saw moving lights in the distance. It was the lead column of the Exodus they'd passed some time ago on the way out to explore the tunnel.

He spurred his horse into a trot, eager to get back now that 'home' was near.

As he came abreast of the column, the people cheered. Those who had lamps lifted them high into the air and swung them back and forth.

French waved his arm and smiled tiredly. He had yet to accept, deep down, that he was not a very big Chief in the eyes of these people. No, much more than that—the Consort of a goddess.

He wondered with an undertone of gallows humor whether simple, ordinary Rivera French would become a mythical figure someday. At the moment, thank God, he was still considered human. Unlike Miri. Miri had already assumed the mantle of divinity.

More likely, he thought, I'll be remembered, if I am remembered, as one of the great crackpots of the eleventh century, conned into playing Moses by a small and nutty religious cult. They'll laugh and joke about me. "French? Oh, French was that slum kid who made it big in the upper

world. One day he dreamt that the structures would crumble. And so he talked these people into leaving Ricardo, see, but when they got out of the tunnel, Ricardo was still there, same as ever."

On the other hand, he thought, there is Serenita.

To think of the Cult Mother was to deepen the ambivalence he still felt about this—all this..

The tall, severe figure of the nun appeared before his eyes as she had stood in the darkness of an ancient parking lot, face shadowed by a cowl. Serenita had come down to visit Miri in the temporary headquarters French had established next to an enormous hall, anciently a station of the undercrust. He had followed her back up when she left again after tearful farewells with those sisters of the Cult who had joined the Exodus. He had confronted her in the darkness and had accused her of creating crisis, of deliberately fostering disaster.

Snatches of that conversation floated through his mind as he rode past the column, waving to the people.

"I do nothing," the nun had said. "I serve the Queen of Heaven, the sweet Jesus, God the Father, the Holy Ghost, the Trinity, the Great Unknown, the Cosmic One, Buddha, Krishna, Shiva, Aphrodite—name your god, Mr. French. I don't make the Great Change, Mr. French. It comes of itself when the time is ripe. You and I and all the rest—we're witnesses of a drama we don't direct. There is no one in charge, Mr. French. No one. *She* is in charge."

He insisted that she had rigged the confusions surrounding the Helium round, had had her agents—like Miri

and Regina—interfere.

The nun shook her head inside the cave of her cowl. "How can I cause war between Union and the tribes? War must be there in the heart first. We are a tiny Cult, Mr. French. We merely predicted the Great Change. We don't pretend to rule—only to know."

The future cannot be known, he insisted.

"You're half right," she said. "The future is murky—but sometimes quite inevitable. When a seed is planted, it may or may not germinate. But once a flower has sprung up, it will surely wilt again? Eh?"

She went on to liken culture to a plant that grows, flowers, gives fruit, and dies. The plant was Western Christendom and the world today its final manifestation. In the scheme of things, she said, the culture had died long ago, long before LNW-XIII. Real life had left the dead trunk of the tree. Great Change meant a new beginning rather than an ending.

A hundred million people dead, he protested. That's what Great Change meant. He thought it was terrible.

"Why?" she asked. "Life will go on. Cells may die, individuals may die, but life goes on. You are mesmerized by numbers, Mr. French, and you're dishonest and sentimental on top of that. You agonize over the death of millions. But you killed two men yourself in the past week or so, and you never gave them a second thought."

The words shocked him with their truth. How did she know, he asked, had Miri—

She shook her head ever so slightly. "I know you, Mr. French. I'm stand-

ing in your aura, you know, and I'm a psychic. I know all about you. The life of action. Adventure, danger, tests." She smiled. "The mind," she continued, and pointed a slender index finger toward her temple. "The human brain cannot encompass these cosmic events. But, as we say, 'the Male pretends to rule.' Give it up, Mr. French. It doesn't become you. You're a man of the future. Action, eh? Life, movement, love. Not dark, puzzling thoughts and reckonings. You can't make sense of it, so why pretend? You've done well so far. You've followed the Lady—your heart. Not the Male—your head. Your future is bright. Flowers in the meadow, Mr. French. Flowers in the meadow. . . ."

Flowers in the meadow. . . .

Her words echoed in his mind as he rode past the people in the tunnel, smiling and waving automatically. Miri said that Serenita spoke obscurely, that being the Lady's way, indirection. The old woman had made him think, had convinced him of some things, had left him doubtful of others. He wasn't sure at all about his future.

The human mass he passed came from the very dregs of structure life, crackpots like himself, but of another sort. In the dim light of lumiglobes, their faces were blueish and sallow, gravitron-burned; their forms were stunted. They had nothing to lose.

Maybe they'll inherit the earth, it flashed in his mind.

At last count ten thousand had joined the Exodus. They'd come down by hundreds of paths, following smuggling routes. They'd lain on the floor of the undercrust station in areas marked out by luminous paint, writh-

ing and spasming from pressure loss. Then, later, supplied with food and lights by foragers, they were formed into companies and launched on their way to ancient Chicago by several west-bound tunnels.

Ten thousand superstitious slum dwellers, these, who had believed the rumors leaking out of Branco that the world would end and that a woman would lead the chosen to safety.

French thought of the other Ricardo millions—who were more sensible. They too sought salvation, but in another way. Pent-up frustrations had exploded into riots all over the city.

French left the first and reached the second group. The cheering and light waving began all over again. He figured he had to pass ten more companies before he would get some food and drink. It was early afternoon, although you couldn't tell it in the tunnel's perpetual night. He hadn't eaten since morning.

French wondered who would be more disappointed—those who'd stayed above and were now being systematically 'pacified' by the troops Harvanth had flown in from several neighboring structures. . . or those who had thrown in their lot with the Goddess Miri and Her nearly divine consort, Rivera French.

It would all depend on the secret agendas—Union's and Ecofreaks.

And God help us all, no matter what!

An hour later he and his explorers arrived at the station and handed the horses to attendants at a kind of livery stable where Exodus leaders and explorer teams could get animals for tunnel travel. The animals had been obtained from tribesmen in the foothills of the Allagains.

French mounted a makeshift ramp to the platform where people had long ago waited for trains. This portion of Eastcoast had been abandoned following LNW-XIII. The bunker complex where survivors had lived, experimenting with gravitron, lay farther north. Explosions above had trapped large numbers of people down here. Their skeletal remains had been gathered and piled up by explorer teams to make way for the Exodus. French passed such a pile on his way through a darkish structure to the station hall.

He surveyed the busy scene for a second.

On his right a disorderly littering of humanity spasmed on the ground in the grip of Adjustment. Only children were up and about. They appeared immune to the effects of gravitron deprivation. Members of the Cult moved about between prone figures. Ministering, they called it, although all they really had to offer was an encouraging word—that plus the magic aura of the Cult itself.

On the left a group of foragers piled boxes and canned mush into a pyramid as they unloaded a transport jumper. French wondered how they'd gotten the jumper down here. The foragers were ingenious and their job had been made easy by the riots. They'd hauled down into the catacombs an incredible tonnage of loot—food, textiles, lights, fuels, medicines, tools—everything that might be needed for a new start in life out there.

French set himself in motion across the hall. He had reached the center, the point where the luminous lines of demarcation came together, when he heard the dreadful thundercrack.

It seemed that he'd be known as a consort after all rather than as a crackpot.

DYNAMITE THE REFINERIES

DART SCURRIED OUT of Tack's sleeping chamber as fast as his short legs would carry him. His face revealed fear, disgust, and unnatural excitement.

The leader had satisfied his lust at last from all appearances, Dart decided. The Whore had been nowhere in evidence, although the rush of water from the shower stall adjacent to the chamber had hinted that she was cleaning up after the four-day orgy—and she had much to clean off, the Unclean Thing. The stench in that chamber still gagged Dart. Oh! They'd sweated and drunk and jutted up a fearful storm of sin and damnation in there, and the place had looked a mess. Dart had barely found a spot to put his feet on the floor inside, cluttered as it was with empty trays and bottles. The linen had looked positively grey with wear. And Tack himself, pale shade of his past magnificence, had lain darkly amidst the creased and mangled sheets with an iced towel wrapped about his shaved skull like a dirty turban of misery.

In the outer chamber Dart turned jerkily at a fancied motion. His eyes were terrified. But he saw nothing in the murk. *Damn you*, he thought. *Damn you, Barney. Don't you dare stalk me in the shadows!* And he made it out of there even faster. The ghost wouldn't follow him into the bright sunshine outside.

Six or seven members of Tack's guard idled outside drawing circles in

the red clay of the ground, joking with fems from Jonny's harem. The fems spent much time around the Leader's tent spying on their rival from Union, or else they were trying to seduce the men.

Dart could almost smell the rutting fetor of one or two of them—especially that Henrietta, the mutie with the deep red eyes. He reckoned that nothing remained of the sacred Pact of Chastity. Alongside Barney's hollow whispers, Dart had heard lascivious laughter in the woods at night. Jonny's own sported with the jealous fems among the pines while their master groaned inside the tent, completely captured by that Abomination from Union. First Bono, now Tack. In his grave Old Tack—

No, not that! Dart hurriedly thought. He shivered again, only too aware that Barney's ghost had come out into the sunlight after him and must stand right next to him now. No thoughts about graves. An idea came to Dart. Barney must be buried. Yes. He probably still dangled from a rope in the embassy, the last Ecofreak in Union. He had to be put underground with a heavy stone to weigh him down.

Across the empty circle of the camp, past the metal tower on top of which the shielding mechanism, equipped now with its critical silco-switch, gave forth an invisible but potent oscillation, he could see Ecofreak elders and leaders from other tribes stand outside the council tent waiting to hear what he had accomplished.

They'd come north in copter after copter determined to persuade Jonny to hold off, to countermand his orders. But Tack refused, despite the disturbing speculations burly Sonder, the

physicist from Kaysee, had offered. They wanted change, these gentlemen, but none dared to confront the Leader. They insisted that Dart do it. "You are the only man he trusts," they'd argued. And they'd forced him to go in.

Well, he'd gone—but he hadn't pressed Tack hard. Dart had no intention of ending up like that damn-fool Gulfrat leader who'd barged in there two days ago. That night his body had been found bruised black and blue by the boot-heels of the guards. Dart had said "Yes, sir" and "no, sir" to Tack's curt commands. Yessir! Yes, sir, I'll bring you copies of the transmission to Wellhead. As soon as we get through. *And I'll do it, too, by God!*

Dart set out across the empty circle toward the council tent. It might have been so nice, triumphant. Union had delivered the parts. Jets and copters had moved the precious components all over Hinterland. They'd been snapped into place. Hinterland was safe and secure. Or *was* it?

Sonder wasn't sure. Dart had been present when Sonder had looked patiently at one of the ear-shaped components. His thick fingers, square nails had scratched at the fine, thin lines of reddish copper print laid down into the ear by micro-welders. Sonder had shaken his head. The color. He didn't like the color. Some other kind of metal might be alloyed with the copper, just enough to destroy its effectiveness. He wasn't sure that all the parts had defects, not even that any had them. The parts behaved correctly enough in the small test device Sonder carried about with him. But he claimed that Union would try to avoid an obvious defect. The parts had to

have thorough testing, and that meant a testing program in Kaysee, perhaps taking three weeks or so. Dart had been sent in to convince Tack to give them time. Dart had one of the ears in his pocket, and Sonder had shown him how to explain the problem to the Leader. But Dart hadn't even taken the ear out. Tack had not been in a funning mood, not at all, and he'd darkly muttered about trouble-makers who might get some attention from the boys.

Dart avoided the eyes of the people as he walked past them into the council tent (Barney had a trick he liked to play; he would possess now this man and now that and stare at Dart accusingly through the man's eyes.) Inside Dart took up a central position and waited.

Among the men who entered was Fannin. He kept to the back, shadowed by the sloping canvas, his eyes alert. He looked at Dart and knew that Dart had failed—could have predicted that he would. The bad news were in. Sonder threw up all these clouds of suspicion. Tack would never admit that he had failed. Better to go down in a blaze of glory, eh? Back home he wouldn't stand a chance, but here he could still lord it over the tribes, surrounded by his goons.

So what if Union bombs the tribal settlements, Fanin thought. This camp won't be hit. It's too small a target. The Great Leader might survive the holocaust. Then, gathering the remnants about him, he'll try to play the king of kings.

Only, of course, I won't let him do that. Its frightfully uncomfortable around Jonny-boy now that he has let himself go.

Dart held up a hand and the murmurs stopped.

"Tack is adamant. Dynamite the refineries. Cut the pipeline. It's still the same order, and he wants to see the cable transmitting the command. In fact he wants a console moved into his tent so he can monitor what we say." The people groaned. Dart held up a hand, asking for silence.

"He said that Ricardo will fall tonight by his reckoning, and he plans to watch it. We've been asked to organize a column to move up to the edge of the Desolation. We move in two hours."

"Wait a minute!"

Fannin glanced to the side where burly Sonder stood. Sonder was one of the most patient men alive, but now even Sonder seemed to have lost his composure. He moved forward through the tribesmen, stocky, angry. His red beard blazed up like fire when he passed through a sun beam falling from the skylight. Sonder stopped directly in front of Dart, fists clenched tightly.

"Did you tell him? Did you tell him we need time? Did you show him? Well, speak up, Franco!"

"Get away from me, get away from me!"

Dart threw up his hands and backed away from Sonder as if he had seen an apparition. Then he controlled himself and glanced abashedly at the people.

"Don't you rush at me like that again," he growled at Sonder in a changed tone.

Fannin was puzzled by Dart's manner. The old man had become even more paranoid since his return from Ricardo.

"Yes, I told him, but he wouldn't

listen. He nearly threw me out."

"Did you *show* him? The color?"

Dart hesitated.

"Well?"

Dart looked away from Sonder and still refused to answer.

"You didn't show him, did you? You were too cowardly—like all the rest of you so-called leaders." Sonder turned and swept the people with a glance. His blue eyes, usually so placid, burned with anger. "Well, gentlemen, I will tell him. In no uncertain terms. Give it to me. Give me the part."

He wants to die, Fannin thought, watching Dart hand Sonder the part. Next to Fannin Sonder's friends moved nervously toward the entrance. They intercepted the out-rushing Sonder, but he shook loose the restraining arms and disregarded the pleading of his friends.

High time to mosey on along, Fannin decided. Better to be out of the way. Tack might order a general carnage.

Fannin made for the entrance slowly and inconspicuously, while up front Dart squirmed under questions. Outside at last, Fannin slipped off between tents and then, in the obscurity of some pines, he went up into the valley toward that distant barn.

Bono had been right, more or less, he reflected, recalling the conversation he'd had with Bono in the copter. Tack would blow it, Bono had asserted. Now Fannin knew that it was so. He would head out, up into the Allagains. He knew an isolated hut up there where a man could hole up until the mess was over. Meanwhile, he'd just open Bono's cage a crack. After what Bono had been through, he'd take care of the king of kings without

much urging.

He walked carefully, wanting to catch the guard by surprise. He had almost reached the barn when he spied, in the distance, the silvery gleam of a Union airship headed toward the camp. He understood instantly. They had also found the trail of desolation at last and came in search of Regina.

Fannin decided to seek safety on the other side of the ridge. But before he could carry out this intention, the airship suddenly described a graceful turn and headed back the way it had come.

NUMBER ONE

THE AIR SHIP rushed back to Ricardo. The chilling message over the radio had caused the pilot to lose all color. The soldiers in the back were unnaturally still. Blottingham understood their silence. Gravitron failure made you *think*.

From the distance Ricardo looked safe and sound—five silvery stalks of urban life swaying almost visibly with the motion of air masses heading out over the Atlantic. Blottingham didn't expect to *see* anything, of course. Grav failure did not mean immediate structure collapse. That would follow in some hours unless the problem was corrected. At worst the highest levels would begin to sag a little by nightfall, metal pressing on metal, molecules cozying up to each other.

Blottingham reached for the radio speaker and gave a string of instructions to Carmody, but when he stopped and Carmody had a chance to speak, he learned that his aide was more or less on top of things. Blotting-

ham hung the radio speaker back on the dash, sat back in his chair next to the pilot, and ran a hand over the red brush of hair on top of his head. His face was tense.

Lately he had learned to hate the exercise of power. The burden of responsibility rested too heavily now that Unsler had had a stroke and was both paralyzed and struck dumb by a failure of his nervous system. Blottingham could see him: one eye frozen open, filled with terrorized pleading, a strange noise in his throat as he tried to speak past a paralyzed tongue. The stroke had come while the Old Man had watched the riots on the Media. Even if he had wanted to, Blottingham couldn't draw on support from Sidney who, though he was back again, was back an imbecile, a raving maniac, calling every man Tanti and babbling incoherently about his initiation. Blottingham had ordered him locked up in a spare cubo right next door to his stroke-struck father. As for the cabinet, the rest of the family, Blottingham had kept the information from them. Had that been a good decision?

Yes, he decided, it was a good decision. In times like these it was best to hold down panic, even if it meant that Blottingham had to endure the weight of power.

He fell into a reverie, and it occurred to him that he could continue as Unifier-in-all-but-name indefinitely if he wished. Hypnosis and drugs might be used to prepare Unsler for rare public appearances. Tapes of his voice might be used for speeches. A blurry picture on Media. . . . Then it occurred to Blottingham that he didn't really want the power. It nauseated him.

The airship docked at last. Blotting-

ham hurried to a waiting limo. Outside the airport he noticed at once that the troubles were greater than he had anticipated. He could hear a cacaphony of sirens near and far. The rarely used public address system syrumped with soothomuse. What damn fool had ordered that? Nothing panicked people more than hearing soothomuse on the PA system. Blottingham got in and angrily slammed the door.

"What's happening?" he asked the driver.

The man shook his head. He activated the gravitron and lifted the jumper above the movebelt. "God help us all," he said. "We've heard it twice already."

"Heard what?" Blottingham asked.

"The clap..," the man said.

"What?!" Blottingham cried.

The driver nodded. "Somebody really screwed up. No warning. It's just like '44. It's East Tower. The mobs are pouring out. This is big, Mr. Blottingham, big!"

Almost as if to underline what Sanchez had just said, came the sickening, sharp, ear-ringing report. Blottingham jerked involuntarily.

Sanchez looked at him, cocked his head, made a face.

God! Grav failure must have been under way for hours, unreported. It must have begun even before he'd left to follow Regina's telltale track into Hinterland.

They crossed from West toward Central Tower through the beltway. From the mixing bowl in Central Tower, Blottingham observed a mass of humanity moving onto the beltway from East. A dark ooze of people. Blottingham shuddered. People tram-

piled people in a kind of frenzied, animal panic.

Sanchez lifted the vehicle up into Central's shaft.

Arrived at Top Level, Blottingham ran through the lobby where Union's thirty-nine structures hung around the wall around a centrally placed map of the Helium pipeline. He saw no one, as he ran. The place was deserted, swept clean by panic. He took an elevator to the office wing.

Not everyone had fled. A handful of his closest aides were still on the job. They had gathered in an open area usually occupied by visitors. Their faces were ashen. They formed a clump around a visiset, turned when Blottingham came into the room.

Carmody disengaged himself from the others, neat as usual, his black hair almost blue of sheen and meticulously combed. He said:

"Paul, things are in a terrible shape. Communications are down. Belmonte can't be located. The people in Media laugh when we call and disconnect us. We're trying to raise Defense, but no one responds."

"Defense?" Blottingham asked. "Why Defense?"

"Haven't you been told?" Carmody asked. "There is no Helium."

Blottingham gave Carmody an uncomprehending stare. The man repeated his message slowly and with emphasis.

"*There. . .is. . .no. . .Helium!*"

"Are you mad?" Carmody must have discovered this recently, since their discussion on the radio.

"No, Paul, it's the God's truth. The storage tanks are empty. No people in the Pits. The expanders are shut down. And there's nothing in the pipeline, not one molecule.

We finally got Engineering to check it out." Carmody paused. Then he went on. "There's been an Interdiction, Paul, lasting more than four days. But nobody reported it. The records have been falsified. All the gauge watchers are gone. It's some kind of conspiracy."

Blottingham sank down into a chair. He rested his flat palm on top of his brush of hair.

We'll be mobbed. It was his first thought. Once the other towers began to crack, the mobs would make for Central Tower. It was the only one that had a chance. Its drums could be operated with Helium from the standby air liquefaction units anchored out at sea. But Central Tower couldn't hold all the millions. If they came here. . . .

He looked up and asked, "What about the other structures?"

"Interdictions have just been reported—but they just started."

"Oh, God!" Blottingham rose abruptly. "Gentlemen, I'm afraid we'll have to come out into the open. I mean about the Unifier and Sidney. This is big trouble. We'll have to call the cabinet."

Wry smiles greeted this announcement.

"Too late," Carmody said. He beckoned with a hand. Blottingham followed Carmody out to the lip of the glass-enclosed terrace. Carmody pointed to a large fleet of ships—jumpers, limos, and individual jump tubes could be seen heading away from Ricardo.

"There's your cabinet, Paul. And everybody else. Gone to save Number One."

"Harvanth?"

"I suspect he was the first to go. I

told you. We can't get anyone at Defense."

Blottingham stared out the window, chin in hand. His elbow rested on an arm he'd folded across his chest.

An unreported Interdiction. . . . That could only mean that tribes and Proctor were colluding. Only men completely loyal to Proctor could have hidden an Interdiction. Which meant that Proctor controlled the BTA even from the prison to which he had been transferred. And that meant—Belmonte was part of the plot!

Suddenly Blottingham giggled. It tickled and amused him that Proctor and Belmonte and all manner of men from BTA and other agencies had deliberately created chaos. He felt the chaos. What he saw was peaceful enough—the glint of silver from the airships, a few thin clouds, the dark Atlantic. But throughout Ricardo raged a maddened mob. Those thundercracks would drive people crazy. He felt it also. He was just human. And Proctor thought he could control this phenomenon? Proctor was crazier than Blottingham had imagined.

He chuckled to himself. He turned to the men just as another crack sounded—from the direction of West Tower this time. It was physical, tangible. It caused involuntary physiological response. Blottingham noticed that he was on hands and knees on the floor. He stared at tiles marked by the Unsler flower. He laughed.

"Do it again," he cried, turning to the west. He pointed an index finger in imitation of a pistol. "Do it again. Bang, bang, bang. Gotcha!"

The staff, also on the floor, stared at him with terrorized eyes. Blottingham didn't care. Stupid of him to pretend to

be in charge. Insane of them to look at him with those children eyes. Who did they think he was? God?

His mind snapped back to reality.

"The Ecofreaks," he said in a cool tone. "Did anyone talk with the embassy?"

Carmody scrambled up. "None of the embassies answered our calls. We think that . . ."

Carmody's voice trailed out. His eyes stared past Blottingham and out through the drilla-glass. All the others on the floor did the same. Blottingham turned to see what mesmerized them.

The air outside visibly trembled as if heated by a gigantic fire below. Blottingham knew the cause. Compressing plastosteel generated heat. In East, in West, the upper levels would be heating up. The drilla-glass would melt. The seals would break. Then escaping air would create a fantastic up-draft in the shafts, powerful enough to lift men—an internal typhoon. They couldn't stay here. They had to leave.

In quick succession came a series of sharp reports. Crack, crack, crack, crack-crack-crack. Fireworks exploding against the roof of your mouth. Everything swayed and shook. Things fell on the tiles, shattered and slid. Blottingham, like the others, ran across the room crazed with fear. His bowels and bladder released their contents, but he was unaware of it. When the sound stopped, he stood embracing a door. Around him men lay on the ground in fetal postures, rocking. One man had three fingers in his mouth and sucked violently.

"Bang, bang," Blottingham lisped. Then, in the continuing silence, he found control again.

He cried: "Let's get out of here!"

His mind latched on to a simple plan and held tenaciously. In the hall outside, as in all halls, hung cabinets with emergency gear, insurance against surface ruptures: oxygen masks and cannisters, sensitized graviton webbing, medical kits, the like. He ran out toward the cabinets, aware now that his robe was soiled, that waste moistened his legs. He tore open doors and threw gear toward his staff. Some had followed on foot. Others had crawled after him on hands and knees.

"Check your seal," he cried. "It should be blue. If it isn't, take another. Don't pull the rip-cord until we're outside."

Another series of thundercracks made them all curl into terrorized balls on the floor. One man had inadvertently pulled the rip-cord on his graviton gear and now floated in mid-air. Blottingham pulled him down and made him exchange the webbing. Then he ran down the hall followed by the staff.

On the way he passed an office where a visiset glowed. He thought he heard Proctor's voice exhorting the public, but it might have been illusion. Carmody puffed behind him and now called: "What about the Unifier?" Blottingham shook his head and waved a hand dismissing the Unifier. He had a simple plan: escape. He couldn't be bothered.

They reached the emergency exit, a small chamber. He pushed the men into the room and carefully closed the seal-door. He'd never used such an exit, and he looked about, undecided. Glowing dials on the wall drew his attention. In a second he understood the mechanism.

"Put on your masks," he called. He donned his own and tested it. Then, glancing about, he assured himself that all had done the same.

"All right," he called. His voice was muffled by the mask. "Grab your rip-cords. When the door opens, out you go. *Run* out. You've got to get well away from the building. Once you're out there, pull."

He turned dials.

In seconds a hissing sound indicated that internal and external pressures were being equalized. Then the door swung open, and they felt the intense heat of the air outside.

"Run!" Blottingham yelled. "Go on, somebody. Carmody! Go!"

Carmody took a run and leapt out into the void. His head disappeared in a second. Blottingham walked to the door and peered out. Carmody had pulled his cord. The activated webbing had broken his fall. He floated downward gently, his body-weight overcoming the gravitron. He would have a soft landing.

Blottingham turned to the men.

"Easy," he said. "Nothing to it."

At that moment the dreadful sound came again. This time it wasn't cushioned by plastosteel or by drilla-glass. The air pulse slammed into Blottingham and threw him back into the chamber. He fell on top of others at the back of the room. When the sound died out at last, they scrambled up. One by one Blottingham launched the men out. They floated down in an uneven string—men in the bright robes of the nobility.

Alone at last, Blottingham went to the back of the room so that he would get a good start for his jump. Then he hesitated, brushed his hair. His efforts

to help the staff escape had banked his terror somewhat. Now rationality asserted itself. He recalled Carmody's words in the hall: "What about the Unifier?" Unsler couldn't be abandoned. Simple humanity demanded that he should be saved—if not from the collapse of Central Tower, then from the mobs Proctor would launch. Blottingham, for one, had more of a sense of responsibility than to save Number One and let the world go hang.

He turned dials again. The outer door of the chamber closed. Blottingham heard a hissing sound and felt the rise of pressure. He opened the inner door. Once more he hesitated. He had a hunch he shouldn't do this. He'd had a simple plan. Why change it now? But he put the feeling down and ran, drawn by years of loyalty to the Old Man.

Moments later he burst into one of Unsler's sitting rooms carrying grav-webbing and oxygen gear. The sight of men in police uniforms made him recoil, but he was too late. The men had turned toward him. As they did so, Blottingham recognized Belmonte kneeling on the floor next to an armchair. His dark, inscrutable face was turned toward Blottingham, but his hands continued to press down on a pillow. The pillow lay on the Unifier's face.

"Get him!" Belmonte said evenly to no one in particular.

Blottingham turned abruptly and ran down the hall. He heard a series of explosions.

They were not thundercracks this time. He fell down, torn by a force, but he felt no pain, only a kind of giddiness. His head was full of fireflies, his throat full of blood. He

laughed inwardly. He rolled away into laughter.

NO CAUSE FOR PANIC

PROCTOR SWEATED under the bright lights. He could see almost nothing. He spoke to the cameras before him and to the microphones—those mounted on the lectern as well as the one that floated in the air just in front of his head.

He exhorted the people to calm down. The Helium already flowed again, he told them. The thunder-cracks would continue for a while longer, but the danger was past. He urged the invisible masses to get off the beltways. He told them to return to their cubo homes. All is well. Calm down. He repeated this message over and over again.

His voice resounded over millions of visisets, thousands of loudspeakers.

Proctor hoped that his forcibly calm tone would reassure them at last. He had been before the cameras for more than an hour now, interrupted only by infernal blasts of sound. Yet he persisted, despite a growing hoarseness and fatigue. From time to time Hondo Weinberger had appeared to stand between the cameras. Weinberger monitored the activities outside through banks of cameras. At each approach, Weinberger had turned his head from side to side to indicate that panic still persisted, that Proctor should continue to talk.

From the corner of his eye, Proctor now saw another figure between the cameras—Kron. Kron made an urgent gesture, repeated it twice.

Something had gone wrong, Proc-

tor realized, but it didn't bother him too much. In such an operation, something was bound to go wrong. Nevertheless, he brought his remarks to a close. He repeated his assertion that Helium flowed. He called for calm.

Away from the circle of light, he mopped his face with a handkerchief.

Kron said: "Ecofreak isn't responding. We have sent the message five times. With the code signal."

"Are you sure?"

A string of thundercracks cut off Korn's answer. Proctor looked at the people in the studio, pleased at their discipline. Of course they knew that the danger would pass. Unlike the mob.

Proctor had not expected quite so much panic. Much time had also been lost in his very slow progress from the police confinement to Media Central. The beltway had been impossibly filled with trampled corpses.

The noise subsided. "I have bad news, Res," Korn said. "Helium Interdictions have been reported from *all* structures. It all started about an hour ago."

"Damn fools," Proctor said grimly. He meant the Ecofreaks. He imagined the tribal yokels dancing and grinning in stupid glee, thinking they had outwitted Proctor. They were even more careless than Proctor had assumed they were. He had expected them to do the obvious—test the parts carefully before making a move, a matter of a week or two. They hadn't done so. They were led by a madman or fool.

In a corner of the studio, BTA had installed a communications center. Proctor made for that area now, step-

ping over cables. He stopped before a keyboard console manned by a young man. From a corner of his eye, Proctor glanced toward a set of gauges mounted on wheeled consoles. BTA staff and a clump of studio people stood about and stared at the gauges.

Proctor didn't like that clump. He knew that the gauges showed zero gas flow. He lowered his voice as he spoke to the operator.

"Send this message to Ecofreak: 'This is Reston Proctor. You must immediately restore Helium flow. The silcoplast components. . .' " he waited until the operator caught up. "The silcoplast components are deliberately faulty and will not protect you from nuclear attack." He waited again. "I shall order an attack on your settlements within fifteen minutes unless Helium flow is restored to Ricardo and the Interdiction to the other structures is terminated. Acknowledge immediately."

Proctor turned questioningly to Kron. Kron nodded as if to say: Good. You have no other choice.

Proctor said to the operator, "Give them the prearranged code."

The man typed numbers.

The machine clattered rhythmically in readiness. There was no acknowledgement, only the noise.

Korn said: "While you were speaking, Belmonte called to say: 'Mission accomplished.' They also got Blottingham. But most of the family had already fled."

"Sidney?" Proctor asked.

"He is dead," Kron said.

Proctor nodded and turned back to the machine. He noticed the clump of men near the gauges again. They looked expectantly at Proctor. Proctor forced himself to smile, gave them an

encouraging nod, only too aware that his face was a grimace of strain.

He allowed himself to think the unthinkable. What if there had been a communications failure? That could be disastrous. A simple breakdown in a component, unnoticed at their end. The fate of Union could then be decided by an electronic wafer. He turned to Kron.

"How do we communicate with General Martinez?"

"By radio," Kron said.

"I have to have a talk with him," Proctor said. "But could you. . ." He gestured toward the people around the gauges. "I don't want half the world to listen in."

Korn moved toward the group.

Now a series of thundercracks much longer and much more intense than any before exploded the air in the studio. The entire place trembled and moved. The lights dimmed, went out, came on, dimmed, flickered. A camera broke loose from its moorings and sailed across the open space in the center. It careened as its small wheels hit loose cable on the floor. It crashed against a wall, emitting sparks. Weinberger, his hands to his ears, stumbled toward Proctor who half hung by the communications console. Kron had gone down on his knees. His head was just above the floor as he waited for the noise to stop.

Proctor thought: *We're safe. We're safe. Central Tower still has Helium. It's nothing. Nothing at all.*

Beneath this conscious incantation, he perceived for the first time a kind of dark doubt. Could the plan misfire? Could the game be up? Could all the plans, deeds, acts of his life have led to a strange end in a visi studio? To die in a man-made storm of his own devis-

ing? The final practical joke?

The noise stopped at last and Proctor gratefully submerged his thoughts in action. He moved to a radio and gestured to the operator. The man had lain down on the floor, trying to hide from the thunder. Kron no longer had to disperse the observing group. The people had scattered all about the studio.

"Get me Martinez," Proctor said.

The operator's voice quavered, his face was white, sweat stood on his brow.

"Martinez here." The voice had a cheerful sound.

Proctor took the microphone. "This is Proctor. Are you all right, Richard? Where are you?"

"I'm fine, Res. I'm in a command ship. We are about ten klicks off shore."

"Are you up on the latest developments?"

"Are you kidding?" Martinez cried. "I'm up to my ears from the area commands. Helium Interdictions. The people in the regions are agitated but not panicked yet, of course. Was this part of the plan?"

Proctor ignored the question. He said: "Richard, can you explode a bomb some kilometers from Wellhead? In a safe area? By safe I mean away from the pipeline facilities. Quickly? I have to send these birds a message they'll understand."

There was silence from the other side. Only static hissed. Then Martinez came on. "It can be done, Res, but it'll take time."

"Why? Why time?"

"We overlooked something, Res. The bloody heat. Our automatic equipment is ruined, fused. We have to go to manual firing, which means

time. I'm out here supervising the diving operations. We're sending people down to the undersea bunkers."

God! Proctor said: "Why don't you order a firing from Husten?"

"That'll take time too. This is a missile launch, Res, and Husten won't do it on my orders alone. They think I'm just a duty officer. They'll want verifaxed orders from Harvanth, countersigned by Unsler."

Who'll never sign anything ever again, Proctor said. "How much time?" he asked.

"Two hours, three hours, maybe longer."

Silence. Oh, God! Proctor thought. Aloud he said: "The towers will be down by then."

"I'm sorry," Martinez said, "I just can't act any faster."

The long narrow face, the white sunburst of hair, gold-rimmed glasses of Weinberger approached. Weinberger started to speak, but Proctor silenced him with a raised hand.

"Richard, get ready to fire as soon as you are able. I don't know what'll happen. I have to evacuate Ricardo. You get ready and wait for orders. But if a tower goes, you are on your own. Obliterate the swine. Try to get help from the regions. Tell them everything. It's too late for anything else."

Proctor handed the speaker to the operator and turned to Weinberger.

Weinberger burst out: "Res, my God, the intertower beltway broke in two places. More than a million must have fallen. Sucked out by the vacuum. Oh, Jesus, Res. You've got to get back on again. Will this never stop? Have we got the gas yet?"

Proctor slowly shook his head. No gas. No Helium.

"I'll speak to them," he said.

He took a path toward the podium up ahead. He formulated words as he went.

People of Ricardo. Mechanical difficulties make it look as if there will be a short delay before Helium flow can be restored to normal. In the interests of safety . . . evacuate in an orderly. . . no cause for panic. . . no cause for panic. . . .

HUNTING THE OTHER

BONO HAD BEEN IN the darkness of his tunnel so long, he did not realize that day had fled and that darkness had descended outside. Down there, hypnotized by the rythm of his digging, he'd lost track of time.

He crawled out of the tunnel slowly with a wiggling motion, feet first, scooching up with the action of his elbows and knees. The smell of clay was strong about him. At first he had liked the smell. But after three days, four days, five days of digging—he had no real sense of time—he had learned to hate it. It was thick, hard, red clay. It clung to his hands, clothing, beard, hair. He was a red man, red all over, a clay man, a man a-fire with the earth.

His slow motion brought him to the surface. His feet hit the bale of hay he had placed over the opening to hide it. He pushed it aside and immediately heard the hateful sounds coming over the loudspeaker mounted high in the gable of the barn that was his prison—so high that he couldn't reach it to destroy it.

Bono climbed all the way out and stood up. It was dark in the barn. The sun had still been up the last time he had taken a rest. He took strips of

clay-soiled cloth from his pockets, torn from his underwear, and he stuffed them slowly, methodically into his ears.

The plugs diminished the sound somewhat, but not entirely. He knew that the air about him vibrated with the tape recording of Regina's treachery. The noises of their fornication penetrated the cloth and touched his ear-drums ever so slightly. He heard the grunts and groans and the rhythmic beat of bodies on the bed. He heard the smacks and slaps and the agonized breathing. He heard Tack mumble incoherently as he reached out for peaks of passion; and he heard Regina cry out when the dam of her resistance broke and she stumbled into orgasm. And he heard their breathing subside again. Over and over. The tape was spliced so that a series of strivings followed each other, and when the string was completed, it started all over again. The tape ran and ran. Day and night. Bono heard it in his sleep. Only in the tunnel could he find peace.

He stood for a second in the middle of the barn. He had no idea of the mad picture he made: a red apparition with crazed eyes; a beard matted with matter, its forks fused into a single clump of hair and mud; ears extruding strips of cloth that had been white; arms slackly suspended; fingers half curled; nails broken and black. He was alone and knew himself unobserved. He was a soul, now, his physical being immaterial. But his soul too was on fire with a red burning.

He undid his fly and urinated where he stood. The pure physical act almost brought him back to sanity, but the touch of his genitals reminded him of a wondrous night in a cabin high in the Allagains—and its ruin, heard now

muted but for that reason so much more intensely.

An overwhelming rage gripped Bono.

"God damn you, bitch!" he yelled with total abandon. "God damn you, God damn you to hell. God damn you, God damn you."

Screaming this at the top of his lungs, he went down on his knees and pounded the hay-littered ground with a balled fist, putting all of his strength into the act.

Then he sagged down into a sitting position, his fury momentarily spent.

God, he was tired. His back, legs, arms—they all ached from the endless labor of digging. He longed to sleep but knew that he would go back to digging again after a brief respite. By morning, if his calculations were correct, he would be far enough from the barn, on the side which the guard avoided in the morning sun, to emerge unobserved. And then!

And then he would be the incarnation of vengeance. He would be pure hatred stalking. He would be Evil with legs and arms and trunk and head and hands—hands that would seek her neck; hands that would castrate her lover as if he were a sheep.

Bono brooded over fantasies of revenge so vivid he momentarily forgot the tape recording. He sat for a while. Then, groaning shamelessly, he rose. He glanced with longing up to the hayloft where, behind the sound-cushioning bales of hay, he had snatched what little sleep he had allowed himself. But not tonight. He didn't even dare to lay down. He might go off and not awaken until morning. A drink of water. A bit of the bread left him from his single meal. Then he'd go down again.

He walked wearily toward the door where the empty bowl and the pitcher stood. He bent down for the pitcher, aware of muscles in his back he hadn't known he had. Near the pitcher he noticed something he didn't remember seeing before. Something white. He picked it up. A piece of scriptoplast? Huu? He unfolded it and dimly saw writing, but it was too dark to read.

Bono moved closer to the barn door, to a spot where through a crack between door and wall a little of the moonlit night came into the interior. As he did so he touched the door. With a painful screech of unoiled hinges, the door opened.

Bono stared in surprise. He expected to hear the cry of the guard. Instead there was only silence out there: the silence of nature, filled with a rasp of cricks. He stepped out and immediately saw the guard. The man appeared dead; had he been strangled?

In the moonlight Bono read the note. It said 'Remember who helped you. F.'

F? Fannin. Yes. Had to be Fannin.

Bono puzzled over the slip. In three days, four days, whatever the time had been, he had almost forgotten that the world had people other than himself, Regina, and Tack. Fannin. His mind went back to that conversation in the helicopter the day he was caught. Something must have happened. Fannin had decided to secure himself a friend.

Far away Bono heard thunder claps. He looked up at the sky. Odd. The night was unusually clear. He could see a trillion stars. Yes, there it was, the dust-wash of the Milky Way. He had thought to gather it up for Her

once—long ago. Thunder? Strange.

Then Bono suddenly ducked and sought the shadow of the barn wall. He hadn't seen anything. He had simply remembered that he was an escaped prisoner. Another guard might be on his way now to relieve this fellow. Bono glanced to the side and examined the guard closely. Here was another odd thing. This man should have been relieved some time ago. He lay there stiffly, his balled fists high up, tugging at something around his neck. Strangled. Marks in the mud showed struggle. A groove in the clay revealed the final spasms of the man as he had kicked helplessly out, trying to free himself. Fannin's handiwork?

Bono pulled his earplugs out. He heard the tape again. He went in search of the transmitting source and found the recorder on a crate against the side of the barn. He kicked the crate. The sound died.

So shall they die!

Thunder in the distance, direction Ricardo.

Storm over the Atlantic?

To Bono's left, high on the ridge, pine trees offered the shelter of deeper darkness. He ran across the clearing and up into the trees, and in their shadow half walked, half ran toward the camp. When he arrived on a level with the place, he crouched and looked down. The camp was dark, deserted.

He puzzled over this state of affairs when he heard thunder again and this time clearly saw what appeared to be fireworks against the eastern sky. In a flash he understood everything: Why Fannin had acted, why the guard had not been relieved, why the camp lay so dark and empty, why it thundered without clouds.

The Great Change had come.

As it was written, so it was. The Bastions of the Whore were crumbling.

He ran down into the camp.

Bono sought two things: a weapon and a means of transport. He knew where Tack was. Tack would want a ringside seat at the spectacle. And where Tack was, there would be his structure whore.

Like a man possessed, Bono ran from tent to tent. He picked up a hunting knife but threw it away when he found an axe. He searched further, wishing for a pistol or rifle, something that could kill at a distance. He had to get through Tack's guards before he could use this axe on Tack, a crude but effective emasculator.

In the communications tent he saw coils of plast on the floor, exuded by one of the machines. He stopped and found a light. In its gleam he read the messages—a monotonous string of demands and threats from Proctor, who promised to launch Hydrogen through the air.

Bono laughed. Death, destruction, obliteration, mayhem, pandemonium, oblivion, doom.

Yes, sir. Let the world go up with a bang.

He ran on.

At last, in a tent, hung on a pole, he saw a crossbow and stopped dead in his tracks. The weapon seemed to invite him to take it. It hung there, dark, oiled, menacing—as if placed by the Evil One for His obedient servant Bono.

Bono took it down lovingly. He cranked back the bowstring. The weapon was in excellent shape. The wire was taut. It gleamed. He twanged it with a finger. It sang. He had what

he wanted. No weapon suited his fancy better. A full belt of murderous, blunt bolts hung next to the bow. Bono girded himself with it.

Outside he soon found a clump of ponies, three animals. He had a long ride ahead, and he wanted spares. He didn't bother to saddle the beasts. His fierce will alone would guide them without bridles. Moments later he was off.

After an hour, the rythm of motion became hypnotic. The ponies steamed. Sweat-lather penetrated Bono's tunic, dissolved the red clay, and discolored the horses' flanks. The beasts snorted. Up ahead light flashed and thunder sounded.

Later Ricardo appeared over the horizon. It was a brightness. It threw off showers of sparks, each spark a giant piece of plastosteel brought to brilliant incandescence by pressure—but at this distance but a firefly.

Bono recalled another ride, an evening ride; he had been gloomy then and oppressed by a childhood memory. Then, later, he had thrown off all that and had stepped out, a free man, in love with an indescribable dream of an inapproachable girl who had let him approach after all and then had treacherously left him for the bed of another until the story would end with her body engraved. He meant to dig her in with hands already used to tearing clay. Yes.

He exulted with a joy of despair.

Oh, God! Oh, wonderful, oh beautiful, oh tremendous, passionate Hate!

How he longed to destroy, tear, rend, demolish, crush, sever, rip!

Yes, yes. He'd bathe himself in gushes of blood. He'd breathe in the hot, steaming smell. He would smear

himself with blood. He'd wash in life destroyed.

Crack! Fireworks! Crack, crack, crack! A flower of fire. Higher, higher! Explode! Disintegrate!

Bono stopped his pony, rolled off, and mounted another.

"Heeeeey!" he cried, and they were off again.

In the third hour he saw Ricardo clearly. Two of the five towers were mere stumps of blazing fire and smoke. Central Tower had begun to sag as well, and the others were in states of disintegration. The thunder was now a continuous noise and the fireworks a permanent feature of the sky—one burst renewed by another before it could die.

In the brightness and noise, Bono didn't notice another, much less spectacular but, from his perspective, much more interesting phenomenon until he was nearly upon it.

Several small Union airships maneuvered directly ahead of him. Bono saw the broken light-lines of tracer bullets aimed at the ground. Tiny explosions threw up dirt. But in contrast to the overwhelming noise of Ricardo's break-up, these lesser sounds were inaudible.

When he noticed the action, Bono froze. He realized that he had reached Tack's temporary camp. He realized also that the airships, no doubt bound outward to hit Hinterland targets, had surprised Tack and now wrought destruction.

Bono shook an impotent first toward the ships. "They're mine," he screamed. He could barely hear his own voice. He spurred his pony ahead.

Then the airships formed up and came his way, their work done.

Bono rolled off his pony and sought cover in the high mutagrass. The ships went over him—long, lighted cylindrical tubes.

He let them get away before he rose. The ponies had fled. The noise, the lights, the grav-vibes of the ships had chased them off now that Bono's iron will no longer imposed itself on them. Bono continued on foot. He cranked back his bowstring again and put a bolt into the oiled slot. But he was sure he didn't need a weapon any more.

The temporary campsite was a place of carnage. Bodies lay all around, dead, dying. He went from man to man. They lay in a rough circle. They had run out from a center to escape the ships. One by one Bono examined their faces. He knew most of the men. Some he didn't recognize because they no longer had heads or faces. Among those still alive was Franco Dart. He lay on his face, and when Bono turned him with a boot, the old man's eyes stared up in terror.

"I didn't mean it, I didn't want to do it, Barney. I swear. I meant no harm, don't! Don't you dare. Go away. I swear it—"

His voice abruptly ceased.

Bono went on.

He found Tack. Dead. For a long moment Bono stood over the blond giant. Tack was unmarked, but from his posture Bono inferred that Tack had broken his neck in a fall caused by an explosion. Or perhaps his spine had been cracked by shrapnel. The eyes were open and stared up. Empty eyes. They showed no emotion. Bono let the axe slip out of his fingers and went on.

After some searching he found harem girls. He inspected each one

carefully by the light of Ricardo's disintegration. He didn't find Regina, but he knew that she was here, somewhere. He sensed it. The deep conviction excited him. Inadvertently he experienced something akin to lust, the certainty of satisfaction, the breathlessness of approaching passion.

He carried out his search with bent head. All the people lay on the ground, and so his eyes were on the ground, seeking depressions in the tall mutagrass. At one point, however, he raised his head, thinking he saw a carry bird land, attracted by death. But his attention had been attracted by another kind of motion, a motion on the periphery of the ring of bodies—in fact beyond the ring. A figure. It came toward the ring. It was a white figure. He knew it was Her.

Bono let out a murderous yell and ran toward her. He held the cross-bow at the ready. He was a hunter. She was the prey. This was the Plain of Baez. And a memory of a dream in a tub, a dream of hares and stinking gel.

She ran in fright at his approach. He changed direction to intercept her. She zigged, like a hare. He zagged to prevent her escape.

Bono knew he was near enough to kill her with a well-placed bolt, but he meant to confront her first. He meant to tell her who it was that stalked her, why it was that she must die and bathe his face and hands with blood.

She wore a dress of some sort, a harem gown. Light blue or white. Maoling silk. The sparks of exploding Ricardo were caught in its sheen. The dress made it difficult for her to run, and she stumbled and fell. He stopped before her. She half crouched, half kneeled. Her eyes looked at him.

They were calm, open, strange. Then he saw recognition.

"Mycal," she cried, and she rose up—tall like a she-hare. Any second she would leap to the side. Oh, yes. Now was the moment to steel the heart against that onslaught of cloying pity—

He raised the bow and took her in his sight. He aimed for her left nipple, a visible target even in the dark.

"Mycal," she cried, "For God's sake, I love you."

She held out a hand toward him.

He knew the rules of the hunt. No hesitation. Let the index finger firmly curl around the trigger like a man's arm around a woman's waist. Let it squeeze calmly, without undue hurry. But though he knew the rules, Bono hesitated. Her tone stopped him. She had cried out her lie with total sincerity—and in a voice so changed and strange it didn't sound like the Regina he knew. He took his eye from the sight, from her nipple, and glanced up at her face. No harm in that. After all, she was a woman, not a hare. She couldn't leap out of his reach.

Her face.

It had a spot of sooty dirt beneath one eye. Her face was calm, serene, yet filled with a touching fondness. Bono felt a weakness in his stomach. No! He jerked his eye back to the sight, but it was too late. A question had formed in his mind, and he knew he'd have to ask it.

He looked up again.

"But why?" he cried. They were close to each other, but he had to shout in the constant noise. "Why did you do it?"

"I had to," she called back. "There was no other way. It was an

assignment."

Bono stared at her. Slowly the bow dropped down. Should he ask her another question?

He still struggled inwardly when the world suddenly filled with light brighter than mid-day. It was a flash so intense it blinded him. *Staging Station*, came the unsolicited thought. Hydrogen. Then the blast sounded. A fierce air whistled past, sharp enough to cut. He dropped the bow and groped forward. Her seeking fingers encountered his. They rushed together and clung to each other as the shock wave picked them up and swept them away.

ENCOUNTER

THE WIND BLEW relentlessly, laden with dust.

Sometimes it let up a little, and then particles of matter glinted in the atmosphere and the landscape could be glimpsed—rolling country, lines of trees. At such times the column stopped with a collective sigh. People shook dust from their garments and scraped dust from their faces, rubbed dust from their hands.

Miri did as the others. She walked in the center of the spearhead group, surrounded by women, children, and old men. Up front and bringing up the rear were young men, a kind of protective guard. They were laughing and joking, happy to be freed for some hours from the burden of carrying gear. Horses! If only they had horses.

Miri removed the cloth that protected mouth and nose, wondering about the wind and what it carried. Dusted earth, yes. And tiny seeds of mutagrass. Maybe that. And broken

structures? Surely that too. And particles of radioactive stuff? Yes, a little. Flower seeds? Certainly. The books had foretold that.

You're strong and resistant, she thought, addressing her child. The radiation can't harm you, baby. You're safe and sound in Mami. Don't you worry, little one. You'll grow up healthy. The world will be full of flowers. The wind will settle. The dust will rain out of the sky. You just sleep and smile.

A man on horseback approached from the distance, and though his face was obscured by cloth, she recognized Frenchy. He came near, embraced her lightly. By now she had accustomed herself to his strong odor. Ah, for a bath.

"Everything all right?"

She nodded, smiling. "We're fine," she said, meaning the baby and herself, but he didn't catch her meaning. Excitement danced in his eyes.

"I'm going on ahead," he said. "One of our explorers has sighted another column. A large one, from what he reports."

She blew him a kiss as he remounted, happy with him. Frenchy forever sought more people, delighted each time he found some little pocket, be it tribal or structure. She watched him ride up a rise, the horse kicking dust. Then the wind began to gust again, and she covered her face. The column slowly got into motion again, going deeper into the interior.

French rode forward at a trot. Mounted on the pony, his head was above the heavy sand and silt carried by the wind, but the finer particles were just as bad.

That wind! It was the perennial subject of thought and conversation. He

pondered its causes again and concluded, as he always did, that it must have been caused by the explosion of Union's total arsenal over Hinterland. Shock waves, in combination, still travelled around the globe with undiminished fury. There seemed nothing much left of either structure or Hinterland, and if this dust kept obscuring the sun, there would be desert here in a few years.

He rode on, trying to spy ahead through narrowed eyes.

After a while, just above the shoulder-high rush of silt, he saw figures moving. This was what the explorer had glimpsed, a long line of people, bundled up much like the folk of Exodus. And animals! By God, French thought he saw a herd of animals revealed and then veiled again by a windgust. And the animals hadn't been loaded.

He yelled out, but in the wind noise he couldn't have been heard. He dug heels into the horse's flanks and made toward the tip of the column.

As he came nearer, he noticed that a large group of people, yes, real people!—had settled down in the shelter of a small, low building. Others were still coming, and behind the first herd of horses he saw another.

French yelled again, excited by the horses as much as the people. Two people detached themselves from the squatting clumps and came forward a ways—a man and a woman, faces thickly banded.

French slid from his saddle and ran toward them.

"Hello," he cried. "More survivors. Am I happy to see you people, where—"

He stopped abruptly, shocked by recognition. The man was Bono, the



woman Regina. French saw that Bono also recognized him.

And then, impelled by some kind of elemental gladness, the two men embraced like long lost friends. They disengaged and laughed, slapped each other on the shoulders, laughed again. "You!" they cried, pointing at each other, and they laughed again.

Later all four were settled in the shelter of the little hut, which turned out to be a compressor station. Once it had pumped Helium toward Ricardo. Miri and Regina sat to one side, discussing the problems of maternity, Cult business, and the burdens of being divine.

The men sat on the other side and compared plans. Bono and his column were headed south. French and the Exodus west. Both had gathered fifty or sixty thousand. A census in this wind was impossible. Stragglers kept

joining. After a long set of preliminaries, Bono finally broached the subject very delicately, inquiring gently about the stores Exodus carried, and what items were in surplus and which in short supplies. French replied evasively and turned the question around. Oh, this and that, Bono said. Knives were in short supply, and now that the column lives on cricks, knives were important, but they were doing well enough without them. Hmmm, French said. Exodus just happened to have a goodly supply of cutting tools of all kinds. Matter of fact, he had almost abandoned several tons of tools because of a shortage of transport. Of course Exodus managed well enough without horses, but. . . .

"Perhaps we could do some business," Bono said.

"Perhaps we could," French answered. ★

*Conroy introduced a whole
new dimension to the
study of Geology!*

Sam Nicholson

MAGMA WAVE

WITH CONROY, it was always something. I warned old Harcourt not to take him along on the Ice Age dig we were splicing with the Norwegians.

Harcourt bristled his eyebrows at me. "Conroy is an excellent, field-trained photographer."

"There must be others. Try the Yellow Pages."

"What have you got against Conroy? We'll be exploring a cave culture. Conroy could snap a black cat in a coal cellar at midnight with a box brownie."

"If Conroy was ever in a coal cellar at midnight, the other occupant would be a werewolf."

Harcourt blew his soup-strainer moustache at me. "What do you imagine you mean by that?"

"The guy lives in another world and drags it around with him."

I felt Harcourt ought to remember that when you went anywhere with

Conroy, you went in his space-time continuum, which might or might not coincide with everybody else's.

Like when we were uncovering pre-Inca trenches, down in Chimbote. It rained. For the first time in several centuries. The fish-meal factories along the Peruvian coast swam in a stinking soup.

Mind you, in pre-Inca times the area had normal rainfall, and that was the continuum Conroy was inhabiting at the moment. He was so wrapped up in skull-trapping that none of us dared admit we had a headache.

We felt lucky to get out of it with only a cloudburst.

Harcourt would not listen to my warning. He told me I was confusing coincidence with chaos and so the Museum shuffled Conroy home from the Middle East operations. When he got back to New York I did my best to talk him out of the Norwegian assignment.

"It's only an island with caves and bones and things, in the Skagerak," I told him. "No blondes."

He turned his brooding eyes on me. "You realize it's been only eleven thousand years since the area was glacial."

"Yeah. It seems like yesterday."

"Do you realize what you are saying?"

Him and Harcourt. I tried again. "Look, Conroy, even in the middle of July the place is cold. Your lenses will fog. The iron deposits

will distort your meters. The film will get a layer of salt. You'll have to eat boiled potatoes and fish heads."

"As usual, Giddings, you miss the point entirely; in 1813 the Skagerak froze solid between Norway and Denmark."

"I guess I was doing something else that week. Conroy, you don't need this job. You can pick and choose. Harcourt is all steamed up over a few scratches on a rock. Ten to one, nothing but doodling by Erik Bloody-Ax or Harald Blue-Tooth. I can take care of it with my new Polaroid."

A pitying look; "You don't even know about the seaweed."

"I'm an anthropologist, not a horseshoe crab."

"I could make a crack, but I won't," he said.

There was no talking him out of the trip. He, Harcourt and I loaded ourselves and Conroy's cameras on a SAS jet to Bergen. We transferred to a local jet to Kristiansand and were met at the airport by the government archeologist who was to see that we did not deface national property or get away with more than the agreed part of the artifacts.

The archeologist was an all-right guy name of Nilsen. He gave us lunch at the Hotel Caledonian and escorted us to a dock where a large wooden launch was waiting, with a grizzled sea-character at the wheel.

Harcourt had ordered local camping equipment, and I would have

taken Nilsen's word that everything was aboard, but Harcourt had to climb into the launch and poke and pry, while Nilsen followed him with a notebook.

I stood on the dock and absently watched passengers disembarking from the Denmark ferry.

"Giddings!" barked Harcourt suddenly. "Where's Conroy?"

I broke off my research. Beside me were Conroy's boxes and gadgets. No Conroy.

"Harcourt, I told you," I said in an aggrieved tone, "he lives in a parallel universe. He's probably in the Hall of the Mountain King or someplace."

Nilsen looked past me and smiled, "Someplace they sell shoes, at least."

I turned and saw Conroy hurrying to the dock with a shopping bag labelled SKO in his fist.

The grizzled character had already cranked up the two-cylinder engine, so there was no time for questions. Conroy stepped into the launch, and I handed over his equipment. I cast off the mooring lines and hopped aboard.

With the load we were carrying, there was not much free space. Harcourt and Nilsen found seats midships, at each side of the engine casing. Conroy and I sat on orange-colored packs under the lee of the focsle.

"What the devil did you buy?" I asked him, as we chug-a-chugged out of the harbor.

He opened the bag and showed me a pair of the heavy wooden scuffs that Norwegians clomp around in during the summer.

"I thought I'd better get these right away. This is a dangerous area."

"Yeah, the Russians are massing at the border. What are you going to do? Stomp them to death?"

"Your priorities are wrong, Giddings. This area is more sensitive geologically than politically. The severe temperature variations could be catastrophic."

Here we went again. Bright July sunshine, a warm blue sea, and Conroy was already a disaster area.

I edged over the packs to Nilsen and asked him, "The larger harbors here are ice-free, aren't they?"

"Normally, yes," he answered. "In hard winters they freeze. About ten years ago the sea was frozen five miles out. I myself drove a car to a light beacon seven kilometers from the coast. The ice was several feet thick, you know. Trucks and busses short-cut across the fjords all winter."

"Has the Skagerak ever frozen clear to Denmark?"

"In the last century, several times. 1812 to 1815 were terrible years. The crops failed, and whole villages starved to death. They could not even fish, because the lakes and the sea were frozen solid to the bottom. When the freeze started, it came so fast that Skagerak fishermen had to leave

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their boats in the ice and walk home."

So Conroy had not been putting me on. If 1812 to 1815 was going to be his time-space continuum, I should have brought ear muffs. On the other hand, he had not bought ice skates. He had bought wooden shoes. Why?

Apparently it had something to do with seaweed.

The island was a grass-and-tree oasis in a line of rocky skerries. On the inner side was a sand beach shelving gradually into quiet water. I was surprised when the boatman cut the motor and sheered away from this natural harbor.

"Sea-grass," explained Nilsen. "It's choking everything this year. It hasn't grown so thick since the mid-Thirties. The water was warm, back then. People went bathing until late September."

Severe temperature variations, Conroy had said. Catastrophic.

We dropped the hook in deep water and eased up to a basalt hump fringed by flat-leaved seaweed so thick it was like a fender for the launch. We packed the supplies

over the rocks, around the arm of the cove. I could look down into the gin-clear water and see the grass growing like long hairs from a scalp.

Nilsen had already made a preliminary trip that morning and left a small plastic boat overturned on the beach. Underneath it were oars, an outboard motor, fuel cans and fishing gear.

"You can't work all the time," he grinned, "and the mackerel are running."

This was my idea of international scientific co-operation.

In less than an hour Nilsen and the boatman had helped us peg down a tent village at the edge of the beach. Nilsen indicated the emergency radio sender and said, "We'll be back in a week. If you run into trouble when you break through that dirt passage, give us a call. A helicopter can be here in half an hour."

We thanked him, saw him and the boatman to the launch and watched it dwindle towards the coast. I suggested to Harcourt, "Maybe I ought to catch a mess of fish for supper, before dark."

He whoofed at me, "Fine. At this latitude it gets dark about September."

So I had to go and inspect his cave. First, in the center of the island was a rune stone which Harcourt dismissed with a brief, "Tenth century." We were after older game.

Beyond the rune stone was a fallen tree. The wide shallow roots were tipped from the pot hole they had covered. We uncoiled a rope down the hole. I hung a flashlight on my belt and climbed down to the roomy cavern.

I crunched on bones as I landed, and I swung the light around. These had been cannibals. The bones were split, the skulls hacked open. I noted the heavy longhead craniums and decided they would test-date 2000 BC, before the roundheads came out of the southern forests.

But we were after older game still. At the back of the cave was a strip of wall that was pounded dirt. Whoever had filled up the passage had partly obliterated carvings that apparently began in the main cave and ran into the passage. They were not runes. Until we had them brushed clean and photographed, we would not know what they were.

Even Harcourt decided it was too late in the day to start on the passage. I left him and Conroy lowering tripods and lights into the cave and went fishing.

I rowed the boat through the slimy sea-grass, not wanting to use the outboard until I was clear. The mess snaked around the oars. As I reached out to untangle it, I felt how warm the water was, almost tropical.

Free of the grass, I started the outboard and trailed a mackerel line alongside the boat. In no time at all I had six shiny beauties. Once again

I oared my way through the grass and dragged the boat onto the beach.

Harcourt and Conroy had already fried potatoes over the primus and set the coffee pot over a driftwood fire. So far, this space-time continuum was not half bad.

As we ate butter-browned mackerel I asked Conroy, "Why the violent temperature swings in this neck of the woods?"

He took a slurk of coffee and began, "You see, Giddings, it's not the sun that determines Scandinavian climate. It's the earth's molten interior."

"What about the Gulf Stream?"

"That's a surface current, more or less constant. I could argue that it, too, is interior-warmed, but it is not relevant to the immediate question. When these harbors freeze over, it's not because the Gulf Stream is out to lunch. It's because the earth's molten core has drained back."

I tried to imagine sea water freezing so fast that a fisherman had to leave his boat and walk home.

As if reading my thoughts, Conroy said, "When the Ice Ages came, it was Instant Freeze, you know. A mammoth stuffed a swatch of grass into his maw—and bingo, choice Bird's Eye."

"But the sun must have been giving heat," I objected.

"Yeah, and how much is that? At its best, barely enough to fry an egg on a New York pavement. We

have central heating on this planet, Giddings. And nobody controls the thermostat. This year the magma is near the surface. The water is warm. The seaweed is growing to choking dimensions."

"It apparently grew that way in the Thirties and shrank back."

"Yes, but there's no rule about its retreat or advance. The geology of these rocks says that the magma burst through to the surface many times. The Ice Ages are evidence that it also has retreated far into the earth, for reasons of its own. I suppose it's sloshing back and forth under the whole world, but this seems to be one of the thin-skinned spots."

The next day we began to uncover the passage, sifting each trowel of dirt and finding two flint-chipping tools, which got us excited because flint was not included in Norway's rock ration—possibly on the theory that Norway had enough else.

At any rate, the flint meant prehistoric trade, and we worked twelve hours with scarcely a break, until the passage was clear.

It led only to another drop-off, so we quit work and went for a swim. The rock still had the day's heat. I noticed gobs of sea grass floating on the water surface and did not want to row through it. I walked to the other side of the island and tried heaving a fishline beyond the flat weed.

The lure was taken by a cod that

fought like a whale. Once again we had a gourmet supper, but Conroy was brooding.

"The grass is floating because the roots let go," he said. "If you look, you'll see the large round pockmarks in the sand."

"And you, of course, know why it let go?"

"Of course. It got too warm. If somebody lit a fire under you, Giddings, I guess you'd float pretty fast, too."

We washed the dishes, hit the sack for a few hours and were up at the first full beams of a sun that had not entirely set.

The warmth of the previous evening seemed to linger, and the coolness of the first cavern felt good. We went through the passage to the drop-off and lowered a flashlight on a rope.

The lower cave seemed filmed with white moisture. It was the gloss of what would have made stalagmites and stalactites if there had been more of it. We did not know about the air, so we lowered a lantern. The flame burned bright and flickered in air currents.

Conroy wanted to work on the upper wall carving, so Harcourt and I climbed down to the new cave. Somebody had been there before us. Long, long before. He lay on the stone floor with a flint ax still in the back of his skull.

He was a long-armed, rough-pebbled monster. His forehead sloped back from prominent eye ridges.

His mouth gaped shark-like. His chin receded into nothing. I estimated he must have stood eight feet tall on his horny feet.

The skull was Neanderthal—but the height?

"A folklore giant," breathed Harcourt through his face fringe. "A troll. Beowulf's Grendel."

The monster had the same film as the cave. I touched a slippery hand. He was petrified, but there was no sign of previous decay. He had been whammed with the ax. He had been thrown into the lower cave and the passage closed. Then, Instant Freeze.

After thirty thousand years—or maybe sixty thousand—the ice sheet had retreated. The upper cave had been used by cannibals too primitive to guess the significance of the dirt section of wall or the wall carvings.

We moved Conroy and his equipment to the lower cave. We could only photograph our find. It would be up to Nilsen to decide to leave him there or pry him loose.

Conroy paused, wiped his forehead and remarked, "You two haven't noticed that we're working up a sweat."

"Why shouldn't we work up a sweat?"

"In a ventilated cave less than fifty feet below the surface? This is no mile-deep South African mine."

Now that he mentioned it, the cave was stuffy. Even the plastic soles of my hiking shoes were stick-

ing to the stone.

For the first time, I noticed that Conroy was wearing his new wooden scuffs. Inch-thick insulation against heated rock. He followed my gaze and said sadly, "I told you this area was dangerous."

We climbed up to the first cave and took deep breaths of the cooler air. We continued to the surface. The day was warm, but the mossy dirt felt normal.

"There's no chop on the sea today," I observed. "We can boat to the mainland and telephone Nilsen."

We walked out of the woods and onto the beach. The boat lay like a white plastic pancake on the sand. I took an involuntary step towards it—and hopped back as my shoe soles melted.

The water was a brown mass of floating plants.

"There's no rule the magma has to retreat," said Conroy.

He walked over to the tents and came back with the emergency transmitter. It had been on top of a wooden crate and was presumably in working order.

Conroy began cranking it. Harcourt and I went back to the cooler woods. Harcourt said hopefully, "The helicopter can be here in half an hour."

"If it's not too busy picking other people off volcanic hot spots."

"Other—?"

"In Peru Conroy's rain went

along the whole coast."

"Conroy's—?"

"Of course, Conroy's! Now he's in another of his space-time continua and has pulled us in with him! I told you, you should have left him in the Middle East where things are such a mess that not even Conroy could make them worse."

Harcourt considered. "Even if you're right about Conroy, in Peru the rain stopped, eventually."

"Yeah, eventually."

Conroy had put the transmitter on a tree stump. The ground-moss under his wooden shoes was turning yellow. Harcourt and I climbed an oak tree. I could see dead fish floating belly-up in sea weed. The edges of the island had begun to steam.

"We're lucky this time, I said. "The magma was advancing. Otherwise, choice Bird's Eye."

In a quarter hour the whirlybird lifted us off. That night the lava burst through the caves, and for a week the island smoked and steamed. Fortunately the volcanic activity was purely local.

Conroy had rescued his films from the island. They developed out as superbly as Conroy's films always did. The Neanderthal monster made the cover of Time, and Conroy was invited to dine with the Norwegian Royal Family.

Harcourt and I returned to New York tourist-class on PanAm. I mean, when it came to happy endings, we were definitely back in our usual continuum. ★

Galaxy

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DIRECTIONS

Dear Mr. Baen,

I have some comments on the February issue of *Galaxy*. First is the cover. The artwork used to be drab and lifeless but now, all I can say is—wow! The October *IF* for example had the best painting I've seen in a long time (by the way congratulate Colin Kapp on the excellent work he did on "Mephisto and the Ion Explorer").

"The Annihilation of Ankor Apeiron" by Fred Saberhagen was a clever story. I am beginning to like his beserker series.

"Allegiances" by Michael Bishop was the best story of that length since George R. R. Martin published *A Song For Lya* in one of the other magazines (the one, like you said, with rivets). Bishop is probably one of the best new writers and should receive a Hugo as such.

"Marsman Meets the Almighty" by Don Trotter was alright.

"The Linguist" by Tak Hallus, or Steve Robinette since he has decided to drop his pen name, was great. It combined a fascinating idea with his always humorous style to create a masterpiece. (By the way "Pow-wow" last ish was superb also.)

Sign of the Unicorn by Roger Zelazny just goes to show that Zelazny is among the top writers of our genre.

Some other comments follow.

I haven't seen *Interface* yet. How about a 'coming next issue' column? Some authors I'd like to see more of are Larry Niven, Clifford Simak, Harlan Ellison, Stephen Tall. [Me, too.—Ed.]

Congratulations on publishing the greatest

magazine in the field of science fiction.

Yours truly,
Tony Trull

3828 Bowen
St. Louis, MO. 63116

Thank you!

Dear Mr. Baen:

I enjoyed the February issue of *Galaxy/If* very much. In the fiction department I thought that Michael Bishop's "Allegiances" was the best because it touched upon an underlying theme that most Americans usually don't even consider and does it realistically.

Dr. Pournelle's handling of the Velikovsky Affair was the best I've seen on the subject so far. It was beautifully handled in a lucid level-headed manner as perhaps it was not in that "certain other magazine". I especially liked his treatment of certain scientists who tried to use Velikovsky's own non-scientific methods. If Dr. Pournelle keeps up the good work we might have another Good Doctor on our hands.

In conclusion I would like to add that I'm very sad to see *If* go under and I would like to know if the financial situation improves in time if *If* could be revived?"

Yours truly,
Lonnie Misner

801 9th Ave. S.W.
Sidney, Mont. 59270

If has suspended before, you know!

Sirs:

Concerning Jerry Pournelle's article (ABM, Missile Eating Lasers And A Bi-polar World. *Galaxy*, March '75); he makes one statement that I would like him to qualify. That statement is:

"A few years ago a fanatic faction within a nation allied with the US actually plotted to trigger a US-SU war."

Although I hate to admit ignorance, I haven't heard anything about it. Was it South Vietnam or one of our other Democracy loving subsidiaries? Do tell. Pournelle seems a little, well, optimistic. The people on top are just a little crazy; and, as Heinlein

said in a speech published in *Analog*, the people on top don't want progress. Our John Cabal has yet to come.

Sincerely,
Jason Goodrow

Dr. Pournelle is quite reticent on this subject!

Dear Mr. Baen:

I enjoyed Jerry Pournelle's very thoughtful remarks on Velikovsky (Feb. 1975); I am especially glad that he got his priorities straight, concentrating on the historical and archaeological issues rather than on the backdrop of "scientific" theory (*cf.* my own letter in *Analog*, Feb. 1975, p. 174). A couple of points, however, deserve further comment.

Dr. Pournelle mentions "maddening discrepancies in chronology", writing that Velikovsky "has correctly predicted that radiocarbon dating would show that certain artifacts of both the XVIII Dynasty and Pre-Columbian Central America would prove to be younger than expected." Alas, this "prediction" should be relegated to the same category as the one about Linear B writing, and, as Asimov has explained, the one concerning the heat of Venus. The radiocarbon dates in question have been brought substantially into line with historical chronology as a result of comparative studies of carbon-14 and tree-ring dates obtained from samples of the bristlecone pine (see for example R.M. Derricourt in the *Journal of Near Eastern Studies*, 1971; C. Renfrew in *Scientific American*, Oct. 1971; V.R. Switzer in *Antiquity*, 1973). As Renfrew points out, this realignment of C-14 dates has repercussions in European prehistory. Altogether, it seems that the problem has been one of proper interpretation of the C-14 results.

As basic sources on ancient Egyptian and Near Eastern chronology, I recommend: W.C. Hayes, M.B. Rowton, F.H. Stubbings, "Chronology" (Revised *Cambridge Ancient History*, Vol. I, chap. 6); R.A. Parker, *The Calendars of Ancient Egypt* (Chicago 1950);

R. Ehrich, ed., *Chronologies in Old World Archaeology* (Chicago 1965). It should be noted that Egyptologists do not rely on Manetho nearly as much as they did in the last century, when contemporary sources were not as well known. In fact, the 18th Dynasty, which is so well documented in the records of Egypt and in the international diplomatic correspondence of the ancient Near East, is rather garbled in the recensions of Manetho which have come down to us.

Dr. Pournelle's arguments establish most convincingly "that the Thera eruption, although locally devastating, was *not* a world-wide catastrophe." One shudders to anticipate what some unborn Velikovsky three or four millennia hence will make of surviving records of Krakatoa, the San Francisco Earthquake, the Chicago Fire, and the devastation of two World Wars—a Ragnarök indeed! Unfortunately, Pournelle seems to be leaning in the direction of the same sort of *deus ex machina* approach to historical events with his "wild guess" about the meteor strike—which I am eager to see more fully elaborated in a future issue of your magazine.

Sincerely yours,
Edmund S. Meltzer

University of Toronto
Department of Near Eastern Studies
Toronto, Canada

The bristlecone pine corrections to radiocarbon dating have certainly taken the discrepancies out of the range Velikovsky "predicted", but I'm not convinced they've resolved all the problems with conventional dating. Mrs. Vronwy Hankey has been kind enough to send me her "Absolute Chronology of the Aegean Bronze Age", and believes she has resolved most key events within ± 25 years, but I fear I harbor a few misgivings still.

The chronology arguments center to some extent around an astronomical event known as a heliacal rising of Sothis.

There's some question about which star the Egyptians called Sothis (although the

vast majority of experts believe it's Sirius, and so would I were there not a report by a reliable observer that Sirius is "blood red"). There's even more question about the latitude at which the observation was made, and this is a key problem since it determines the date.

My wild guess about Phaeton should be in this column sometime next fall.

Jerry Pournelle

Mr. Baen,
Concerning your March Issue:

I applaud the attitude expressed in your editorial. Actually, I have enjoyed your mag because it is primarily filled with up-tone stories.

And yet you included a very depressing piece, "Changelings", which I did not enjoy at all.

Spider Robinson's story did not have a pleasant ending, yet neither was it emotionally oppressive. He is a very fine writer and by dint of this I enjoyed his story. Chilling and cohesive. Very good.

Another goodie was "Politics of Rat-ticide". What an off-beat, funny story! I loved it.

"Tree of Life" was enjoyable.

But the real reason I sat down to write is the Zelazny serial. It is phenomenal and I was excitedly looking forward to the conclusion. After all, in the Feb. issue it was tagged a three-parter.

So I'm reading along a thousand miles a minute and I come to page 112 and there is no more story! A zillion questions unanswered and no real ending, not even your little *, which heralds "the end". I mean, what happened? Don't tell me that was the end or I'll go stark raving bananas!!

Christy Kanes

1811 Bellevue Avenue
Los Angeles, CA. 90026

A good meal will generally contain a bit of pepper and a little vinegar—for flavor. As for SIGN OF THE UNICORN, that was Part III of III—of an open-ended series. (The star was missing due to a typesetting mishap.) But

be of good cheer; Roger says he has almost finished the fourth Amber novel, and with a little encouragement from the Readership, I just might be persuaded to publish that one too!

Dear Mr. Baen,

I, like you, have hopes for the future of mankind.

We are big enough to do anything we want to do badly enough.

Here is our dilemma: So many shouts are heard against scientists and technology. So many cries of doom ring out.

I believe we must take some risks for the good of all. Nothing we have ever accomplished to the good has been without risks or mistakes or danger, including the founding of this nation.

I can only write this letter to you today because of the miracle of penicillin. I would not have survived my first year of life without it.

We are a nation that has permitted ourselves to become too depressed.

But, I know that somewhere in our hearts and minds, our great warm and humorous spirit still exists.

Let us return to our dreams and hopes and yes, our miracles.

Let us show our children that we are made of the same stern and noble blood as our Founding Fathers.

Let us strive to give our children new dreams to dream and new frontiers to brave. But more than that, let us strive to give them examples of courage, fine character, backbone and deep humanity.

Sincerely,

Mrs. Sandra McNabb
13 Pomme Manor Ct.
Arnold, Missouri 63010

But let's also keep in mind just how fragile a thing is our planet's biosphere—and how gently we must treat it.

Dear Mr. Baen:

Concerning Jerry Pournelle's Velikovsky article in the February 1975 Galaxy/Iff: There is no need for a giant meteor strike in the

Mediterranean. Rhys Carpenter's *Discontinuity Of Greek Civilization* (w.w. Norton, N.Y., 1968) presents a more than adequate climatological explanation which fits not only Greek discontinuity but also late Roman ones. In addition certain facts usually found only by delvers into oceanography (biophysical) support Carpenter's thesis (the facts 'fit'). I know this sounds awfully general—needfully so since the data is in books of material and final 'proof' in yet-to-be-done computer studies and collation of data (historical, meteorological, 'biological'). However, it is a directive to those who are interested in what may be the facts of our history!

I have some further input on the issue however. I agree with much of what 'Alter' has to say. Perhaps it's my long (13 yrs.) habitation of the 'rivet' shop across the newsstand, but some of what you publish does seem pretentious ("A Horse Of A Different Technicolor", previous issue), overdone and almost plotless ("Straw") and so obviously 'social-idea-prone' ("Be Ye Perfect") that Geis' words ring true and reverberate. Of course there are good and even captivating stories ('Sign Of The Unicorn') and the 'rivets', too, show signs of yielding to the pressures of including minority characters and overdone philosophy where it's not necessary to the story. Still it would be nice if the College English classes were left in the classrooms.

Sincerely
Bill March

Does a minority character have to be "necessary to the plot"?! (Jerry's reply follows.)

I'm familiar with Carpenter's thesis, of course. It isn't universally accepted, and even if it were, his view that a massive climate change caused the Dark Ages does not finish the job.

What caused the climate change? In the year 1814, Tamboura blew off with somewhat less energy and considerably less attention than Krakatoa somewhat later in the

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century. Yet 1815 was known as "the year without a summer" because the particulates ejected by the volcano actually changed the albedo of Earth. Less sunlight penetrated, less energy to evaporate water, less sunshine, etc.

It's postulated that a really large meteor, as I suppose Phaeton to have been (and recall that this is no more than a guess, an hypothesis, a debating point; I have no wish to start a new school of archeology) would

have quite an effect on climate.

Pomerance of the Archeological Institute of America gives some convincing arguments against the simple barbarian migration theory that's generally accepted as the cause of the Dark Ages. Phaeton could have softened up the civilizations with tsunamis, changed the climates to weaken them further, and set the barbarians in motion as Carpenter suggests.

Jerry Pournelle

Galaxy

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Merlin and the Dragon



Jack Goughan
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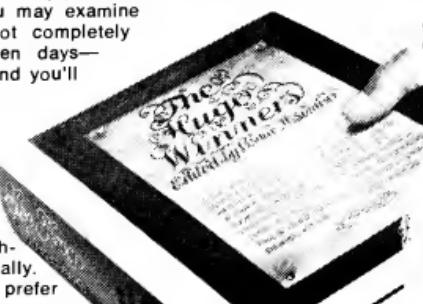
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